

AUTHOR INDEX

- A**
- Ackerman, L., 62
 - Acree, F., Jr., 43
 - Adam, J. P., 423, 424, 425, 426, 428
 - Adams, C. C., 102
 - Adamson, A. M., 183
 - Adamson, B. E., 193
 - Adhikari, A. K., 422, 427
 - Adriaanse, A., 94, 227
 - Ahmad, T., 238
 - Aizawa, K., 34
 - Akesson, B., 5, 6, 10
 - Albert, A., 65, 66
 - Albrecht, A. M., 53
 - Alighieri, R., 422, 426
 - Aldridge, W. N., 310, 313
 - Alexander, A. J., 208
 - Alexander, C. C., 345
 - Alexander, R. D., 89, 119, 227, 228
 - Alfaro, A., 199
 - Alicata, J. E., 405
 - Allee, W. C., 72, 81, 162, 183, 184
 - Allen, H. W., 166, 294, 328
 - Allen, M. D., 210
 - Allen, O. N., 381
 - Allen, W. W., 167
 - Allred, A. M., 326
 - Almeida, P. R. De, 379
 - Altmann, G., 53
 - Amin, El S., 42, 43
 - Ammon, R., 52
 - Anders, F., 142, 143, 145
 - Andersen, A. L., 367
 - Anderson, A. D., 304
 - Anderson, D. B., 186
 - Anderson, E., 82
 - Anderson, H. W., 381
 - Anderson, L. D., 373, 378, 380
 - Anderson, N. H., 354
 - Anderson, R. F., 324
 - Anderson, T. J., 108, 111
 - Andison, H., 352
 - Andres, L. A., 327, 380
 - Andrewartha, H. G., 162, 165, 183, 184, 186, 195, 196, 235, 236, 240, 245, 251
 - Andrews, J. M., 402
 - Angermann, H., 209
 - Anglas, J., 12
 - Angus, T. A., 279, 283, 286, 287, 289, 292
 - Antongiovanni, E., 348
 - Apple, J. W., 372
 - Aragão, H. de B., 403
 - Arant, C. H., 379
 - Arant, F. S., 378, 379
 - Araujo, R. L., 127
 - Arbutnott, K. D., 199, 282, 283, 286
 - Archibald, H. M., 428
 - Armitage, H. M., 236
 - Armstrong, T., 345, 355
 - Arnason, A. P., 371
 - Arnold, C. H., 346
 - Arnold, E. W., 372
 - Arnold, J. W., 3, 5, 6
 - Arnott, D. A., 260
 - Arrow, G. J., 121
 - Arthur, D. R., 236
 - Aruga, H., 68
 - Arvy, L., 2, 3, 4, 6, 20, 33
 - Ashdown, D., 378, 379
 - Ashman, H. G. W., see Williams-Ashman, H. G.
 - Asperen, K. van, 29, 311, 314
 - Atkins, W. G., 324
 - Atwood, C. E., 94
 - Aub, J. C., 26
 - Aubin, M., 187
 - Aucilair, J. L., 141, 143, 145
 - Auer, C., 278, 289
 - Augustinson, K. B., 311
 - Aurivillius, C., 100, 101
 - Aust, S. R., see Roegner-Aust, S.
 - Avens, A. W., 351
 - Avi-Dor, Y., 304
 - Axelrod, D. I., 100
 - Ayontantis, A. J., 120
 - Ayre, G. L., 354
 - Ayurakitsosol, L., 424, 429
- B**
- Babcock, K. W., 199
 - Baccetti, B., 10
 - Back, E. A., 110
 - Bacon, R., 392
 - Bacot, A. W., 395
 - Badger, L. F., 400, 401
 - Baerends, G. P., 207-34; 207, 208, 212, 213, 218, 219, 221, 222, 223, 224, 225
 - Baggiolini, M., 345
 - Bailey, V. A., 240, 243, 245
 - Baird, R. B., 278, 280, 289
 - Baker, A. C., 402
 - Baker, C. F., 391
 - Baker, E. W., 354
 - Baker, W. C., 324
 - Balch, R. E., 293
 - Balduf, W. V., 128
 - Ball, G. H., 22, 24, 25, 26, 29, 30, 31, 32, 34, 162
 - Banerjee, S. N., 379, 380
 - Banks, C. J., 142, 144, 145, 147, 155
 - Barkmeier, H., 66
 - Barnes, H. F., 93
 - Barnes, J. M., 303, 306, 313
 - Barnes, M. M., 343-62; 327, 344, 347, 352, 354
 - Barnes, O. L., 140
 - Barnes, S., 321
 - Barsa, M. C., 25, 29, 304
 - Barth, R., 43
 - Bartlett, B. R., 328
 - Bartlett, M. S., 235, 247
 - Bastock, M., 216, 219
 - Basu, A. C., 379, 380
 - Bates, H. W., 123, 124, 125
 - Bates, M., 93
 - Batzer, H. O., 193
 - Baumgartner, W. J., 19
 - Beal, F. E. L., 128
 - Beament, J. W. L., 310
 - Beard, R. L., 9, 10, 179
 - Becht, G., 305, 309
 - Beckel, W. E., 24, 25, 32, 33
 - Becker, E., 66, 69, 70
 - Becker, G., 102, 104, 118
 - Becker, H., 353
 - Beckham, C. M., 349
 - Beckmann, R., 70, 71, 72
 - Beebe, W., 208, 221
 - Beeson, C. F. C., 98, 101, 102, 106, 109, 110, 112, 113, 114, 115, 116, 117, 118, 119, 129
 - Béguin, S., 280, 283, 287, 290
 - Beirne, B. P., 236
 - Bek, J. J. M., see Mansouri-Bek, J. J.
 - Bélář, K., 19, 33
 - Belehradek, J., 185
 - Beljakova, M. B., 352
 - Bell, C. R., 280, 283
 - Bell, J. F., 398
 - Bender, E., 349
 - Benjamin, D. M., 193, 278, 290
 - Bennett, B. L., 400
 - Benson, R. B., 94
 - Benzitz, G., 2
 - Bequaert, J., 129
 - Beran, F., 323

AUTHOR INDEX

- Berger, N. E., 315
 Bergold, G. H., 277, 278,
 284, 285, 288, 289, 292,
 293
 Berlese, A., 1, 11
 Bertti, A. L., 422, 423, 429
 Bertram, D. W., 423, 426
 Bess, H. A., 170, 265, 268
 Bethe, A., 39
 Bettini, S., 314
 Beutenmuller, W., 102
 Bews, J. W., 259
 Bhalla, B. D., 423, 428
 Bhatia, B. M., 99, 101, 102,
 106, 109, 110, 112, 113,
 114, 115, 116, 117, 118,
 119
 Bhatia, M. L., 422, 423, 424,
 425, 426, 427, 428, 429
 Bhattacharyya, P. K., 381
 Beckert, E., 70, 71, 72
 Bier, K. H., 49, 222, 225
 Bigger, J. H., 372
 Billotti, E., 278, 279, 280,
 289, 294
 Birch, A. J., 62
 Birch, L. C., 78, 183, 184,
 186, 195, 196, 235, 236,
 240, 245, 251
 Bird, F. T., 277, 278, 285,
 286, 287, 290, 292, 293,
 295
 Bird, L. S., 381
 Bishop, M. W. H., 169
 Bishopp, F. C., 404
 Black, R. H., 423, 428, 429
 Blackman, M. W., 102
 Blackwelder, R. E., 101
 Blair, F. 82
 Blair, K. G., 102
 Blanchard, R. A., 372
 Blanck, A., 187
 Blatchley, W. S., 120
 Blest, A. D., 208, 216, 219,
 224, 228
 Blinn, R. C., 319, 337
 Bliss, C. I., 190
 Blount, B. K., 62
 Blum, M. S., 310, 315
 Blunck, H., 282, 283, 285,
 294
 Boccacci, M., 314
 Boch, R., 225
 Bocking, V., 322
 Bodenheimer, F. S., 102,
 116, 129, 139, 142, 145,
 147, 151, 156, 186, 187,
 190, 191, 192, 194, 196,
 199, 236, 251
 Bodenstein, D., 27
 Bodin, N. O., 220
 Boerema, L. K., 209, 219
 Bolwig, N., 225
 Bondar, G., 120
 Bonnetoi, A., 280, 287, 290
 Bonnemaison, L., 145, 147,
 378
- Booth, C. O., 147, 151, 152,
 153
 Boppe, P., 126
 Bordas, E., 422, 427
 Borden, A. D., 349
 Börner, C., 139, 140, 142,
 144, 145, 147, 155
 Bosc, J. M., 101, 109, 111,
 120
 Bovey, P., 278, 279, 294,
 351
 Boving, A. G., 128
 Bowling, C. C., 378
 Box, H. E., 111
 Boyd, M. F., 415, 417, 418,
 419, 420, 422, 423, 424,
 425, 426, 427, 428, 429
 Bradbury, F. R., 378
 Bradford, S., 26
 Bradley, J. D., 349
 Brase, K. D., 350
 Breeland, S. G., 379
 Breinl, A., 405
 Breland, O. P., 89
 Breny, R., 278
 Breuning, S., 99, 122, 123,
 125, 126
 Brian, M. V., 210, 235
 Brian, P. W., 381
 Brickenstein, C., 212
 Bridges, C. B., 429
 Briggs, J. B., 349, 352
 Brill, N. E., 399
 Brindley, T. A., 282, 283,
 286
 Broadbent, L., 145, 146,
 147, 150
 Bronskill, J. F., 165
 Bronson, T. E., 378
 Brooks, A. R., 78
 Brooks, F. E., 110, 128
 Brooks, J. W., 373
 Brooks, M. A., 144
 Broquist, H. P., 53
 Brown, A. W. A., 304, 309,
 313
 Brown, B. E., 304
 Brown, B. R., 63
 Brown, F. C., 210, 215
 Brown, F. M., 95
 Brown, R. V., 313
 Brown, R. Z., 210, 215
 Brown, W. J., 77-98; 80, 90,
 92
 Brown, W. L., 85
 Bruce-Chwatt, L. J., 428
 Bruch, C., 111, 120, 126,
 127
 Brues, A. M., 26
 Brues, C. T., 128, 251, 254
 Bry, R. E., 328
 Bryant, J. C., 31
 Bryden, J. W., 169
 Bryson, H. R., 378
 Buchanan, L. L., 87, 90
 Bucher, G. E., 185, 278,
 280, 284
- Buchholz, C., 208, 209,
 217, 221, 223
 Buchka, E., 120
 Buchner, P., 103
 Buck, J. B., 21, 25, 26, 29
 Buckell, E. R., 128
 Bucklin, D., 33
 Bugbee, R. E., 259
 Bugnion, E., 121, 126
 Bull, L. B., 403
 Burchfield, H. P., 344, 335,
 336
 Burgerjon, A., 289
 Burges, H. D., 184, 190,
 193, 200
 Burgess, L., 188
 Burke, H. E., 103
 Burkhardt, C. C., 378
 Burnes, M. L., 26
 Burnett, R. G., 23
 Burnett, T., 235-50; 168,
 239, 241, 246
 Burt, P. E., 325, 328
 Burton, L., 23, 29, 34
 Burton, R. K., 381
 Burton, V. E., 327
 Bushland, R. C., 320, 323,
 332
 Busnel, M., 221
 Busnel, R., 221
 Busnel, R. G., 68
 Busvine, J. R., 303, 307,
 320, 321, 322
 Butenandt, A., 39-58; 40, 41,
 42, 45, 52, 70, 71, 72,
 Butler, C. G., 45, 46, 47,
 166, 208, 210, 225
 Butler, L. I., 328
 Butovitsch, H. von, 115, 117,
 119
 Butz, E. L., 349, 353
 Buxton, P. A., 186
 Buxton, S. S., 378
- C
- Cable, R. M., 185
 Calderbank, A., 63
 Caldwell, N. E. H., 346
 Cali, C. T., 304
 Callan, I. W. M., 371
 Callaway, S., 338
 Callenbach, J. A., 378
 Cameron, E., 257, 258, 259
 Cameron, G., 17, 30, 32
 Cameron, J. W. M., 185,
 278
 Cameron, M. L., 144
 Campbell, F. L., 331
 Campbell, T. G., 262, 270,
 271, 272
 Campos, F., 121
 Canning, E. U., 284
 Carlisle, D. B., 47
 Carlson, E. C., 364, 366,
 367, 368, 369, 371

- 372, 373
 Carlson, F. W., 345
 Carlson, J. G., 20, 23, 33
 Carpenter, S. J., 94, 423,
 424, 429
 Carson, H. L., 93
 Carson, N. B., 323
 Carter, H. E., 381
 Carter, H. J., 122
 Carter, R. H., 330, 331,
 333
 Cashmore, A. B., 262, 270,
 271, 272
 Casida, J. E., 310
 Cassil, C. C., 345, 346
 Castaneda, M. R., 400, 401
 Castro, A. R., see Ruiz
 Castro, A.
 Cats, V. de M.-M., see
 Meester-Manger Cats,
 V. de
 Causey, O. R., 422, 423,
 425
 Cayrol, R., 279, 292
 Ceder, E. T., 400, 401
 Chambers, R., 18
 Champion, H. C., 111
 Champlain, A. B., 118, 128
 Chan, F. L., 66
 Chandler, S. C., 347, 351
 Chang, C. S., 307, 310
 Chang, S. C., 110
 Chant, D. A., 354, 357
 Chao, S. T., 378
 Chapman, P. J., 354, 355
 Chapman, R. N., 184
 Charin, N., 19
 Chastang, S., 27, 29, 30,
 31
 Chater, E. H., 259, 269
 Chatters, R. M., 142, 146
 Chaudhuri, R. P., 170
 Chaudry, G., 190, 201
 Chauvin, R., 47, 52, 65, 69
 Cheesman, E., 119
 Chefurka, W., 311, 315
 Chemsak, J. A., 118
 Chen, C. S., see Shu-Chen,
 C.
 Cherney, L. S., 407
 Cherone, G., 117
 Chevrolat, L. A. A., 123
 Chibnall, A. C., 152
 Childs, A. F., 313
 Childs, L., 346
 Chinn, S. H. F., 381
 Chisholm, R. D., 324
 Chittenden, F. H., 111, 128
 Chow, C. Y., 426
 Christie, M., 420
 Chwatt, L. J. B., see Bruce-
 Chwatt, L. J.
 Ciucia, M., 422, 424, 428
 Clancy, C. W., 66
 Clancy, D. W., 348
 Clark, E. C., 278, 285,
 290, 292, 295
 Clark, E. L., 379
 Clark, E. W., 25
 Clark, L. R., 266
 Clark, N., 266
 Clausen, C. P., 110, 162,
 167, 168, 179, 236
 Clay, T., 408
 Cleare, L. D., 111
 Clements, F. G., 201
 Cleveland, M. L., 348
 Cloudsley-Thompson, J. L.,
 185, 186, 187, 188, 235
 Colburne, M. J., 426
 Cole, L. C., 235, 251
 Coles, L. W., 322, 329
 Coihoun, E. H., 306, 310,
 312, 314
 Colless, D. H., 423, 428
 Collier, W. A., 18
 Collins, C. L., 186
 Collins, D. L., 321, 345
 Collins, W. E., 322
 Collyer, E., 357
 Concha y Venegas, J. A.,
 422, 423, 424, 426
 Cong-Tiêu, N.-, see Ngugen-
 Cong-Tieu
 Connola, D. P., 325
 Cook, C. W., 259
 Cook, W. C., 187, 195,
 197, 198
 Cordiner, H. B., 378, 379
 Cordon, F. M., 142
 Corella, L. B., 110
 Corrin, W. R., 366, 367,
 373
 Costa Lima, A. da, 109, 111,
 125, 392
 Cottier, W., 110
 Cotton, R. T., 324
 Courtier, A., 291
 Covell, G., 423, 424
 Cowan, C. B., Jr., 379
 Cowan, T. E., 372
 Cowez, S., 20, 28
 Cox, C. E., 373
 Craighead, F. C., 79, 95,
 99, 102, 103, 109, 110,
 129, 193
 Cralley, E. M., 380
 Crane, J., 209, 210, 217,
 220, 222, 224, 226, 227
 Crawshaw, G. A., 106, 129
 Crenshaw, J. W., 95
 Cressman, A. W., 185
 Cridle, N., 92
 Cromartie, R. I. T., 59-76;
 63, 64, 72, 73
 Crow, J. F., 322
 Crowd, S. H., 381
 Crowell, R. L., 325, 326,
 327
 Cuénod, L., 11
 Culpepper, G. H., 323
 Cumming, F. G., 349
 Cunningham, W. J., 235,
 246
 Currie, G. A., 251, 259,
 265, 270
 Curtis, O. F., Jr., 354
 Cushman, R. A., 128
 Cutkomp, L. K., 280, 283,
 286, 289, 326
 Cutright, C. R., 346, 347,
 351, 355
 Czihak, G., 9, 12
 D
 Daanje, A., 207
 da Costa Lima, A., see
 Costa Lima, A. da
 da Fonseca, J. P., see
 Fonseca, J. P. da
 Dahm, P. A., 303, 321, 324,
 331
 Dameron, W. H., 253, 259
 Dana, R. H., 269
 Daneel, R., 68
 Daniels, N. E., 378
 Darlington, P. J., 99, 126
 Darwin, C., 79, 80
 da Silveira, M. M., see
 Silveira, M. M. da
 Davatchi, A. G., 155
 Davey, P. M., 141
 David, A. L., 263
 David, J. L., see Limon-
 David, J.
 David, W. A. L., 363, 378,
 379, 380
 Davidow, B., 323, 336, 337,
 338
 Davidson, G., 418, 419,
 427, 429
 Davidson, J., 151, 185, 189,
 192, 195
 Davies, D. R., 313
 Davies, R. G., 351
 Davies, W. M., 269
 Davis, A. C., 373
 Davis, C. J., 261, 269, 272
 Davis, J. W., 379
 Day, M. F., 17-38; 141,
 142, 403
 De, R. K., 280
 Dean, F. P., 345, 346, 347,
 350, 355
 Dean, R. W., 321, 353
 Deane, L. M., 422, 423, 425
 Deane, M. P., 422, 423, 425
 DeBach, P., 178, 184, 236,
 238, 244, 245
 Decker, G. C., 186, 323,
 327
 de Groot, A. P., see Groot,
 A. P. de
 De Jong, D. J., 349
 Deleurance, E. P., 210,
 211, 214
 Demal, J., 23, 29, 33
 de Martonne, E., see Mar-
 tonne, D. de
 de Meester-Manger Cats,

AUTHOR INDEX

- V., see Meester-Manger
 Cats, V. de
 de Meillon, B., see Meillon, B. de
 de Meira, M. T. V. de, see Meira, M. T. V. de
 Den Boer, D. J., 354
 Dennell, R., 5, 13, 73
 Dennys, A. A., 345
 de Peyerimhoff, P., see Peyerimhoff, P. de
 der Kloot, W. G. Van, see Van der Kloot, W. G.
 Derksen, W., 102
 de Ruiter, L., see Ruiter, L. de
 Deschamps, P., 103
 Deshpande, V. G., 110
 Dethier, V. G., 44, 169, 218, 222, 223, 224, 226, 228, 254, 255, 344, 345
 Dever, D. A., 351
 De Vincentis, M., 68
 de Vrie, M. van, see Vrie, M. van de
 Dewar, S. C., 423, 428
 Dewey, J. E., 348
 Dezeeuw, D. J., 367
 de Zulueta, J., see Zulueta, J. de
 Dhir, S. L., 423, 424, 425
 Dias, E., 404
 Dickens, F., 315
 Dicker, G. H. L., 346, 349, 351, 352
 Dickinson, B. C., 345
 Dickson, R. C., 344
 Dill, L. E., 373
 Dimroth, O., 62
 Din, M. Q.-ud-, see Qutub-ud-Din, M.
 Dirks, C. O., 352
 Distant, W. L., 129
 Ditman, L. P., 333, 373
 Dixon, A. F. G., 144
 Dobson, J. W., 89
 Dobzhansky, T., 77, 81, 83
 Dodd, A. P., 112, 252, 253, 255, 256, 257, 260, 261, 262, 263, 271
 Dogger, J. R., 372
 Domenichini, G., 291
 Doneen, L. D., 367
 Doner, M. W., 321
 Donovan, F. W., 62
 Dor, Y. A., see Avi-Dor, Y.
 Dosse, G., 354
 Douglass, J. R., 378
 Doutt, R. L., 161-82; 175, 179
 Dove, W. E., 401
 Dowden, P. B., 278
 Dowling, M. A. C., 427
 Downe, A. E. R., 95
 Downes, J. A., 111, 210
 Downes, W., 352
 Downing, R. S., 355
 Downs, W. G., 422, 427
 Draafsell, E. J., see Jaeger-Draafsel, E.
 Draper, C. C., 418, 419, 423, 429
 Drees, O., 210, 218, 219, 221, 223, 224
 Dreiss, J. M., 334
 Dresden, D., 305, 315, 322
 Dressner, E., 283
 Driggers, B. F., 348
 Drillhon, A., 68
 Drooz, A. T., 278, 290
 Drysdale, S., 306
 Dudich, E., 118
 Dudley, J. E., Jr., 378
 Duewell, H., 62, 63
 Duffield, P. C., 372
 Duffy, E. A. J., 99, 107, 108, 109, 110, 111, 116, 117, 119, 120, 125, 128, 129
 Dufour, G., 423, 428
 Dumbleton, L. J., 110
 Dumortier, B., 221
 Dunbar, R. W., 93
 Dunn, J. A., 145
 Dunn, P. H., 277, 280, 281, 283, 284, 285, 290, 291, 292, 293, 295
 Durasova, M., 344
 Dürr, H. J. R., 109, 114, 117, 130
 Durrant, S. D., 86
 Durtyee, W. R., 20, 33
 Dusham, E. H., 117, 128
 Dustan, A. G., 373
 Dutky, S. R., 279, 282, 283, 288, 289, 291, 292, 293
 Dutt, N., 120
 Dye, F. J., 422, 423, 424, 425, 426, 427, 428, 429
 Dye, D. W., 381
 Dyer, R. E., 399, 400, 401, 402
 Eagle, H., 27
 Earle, W. R., 22, 25, 31
 Eastop, V. F., 151
 Eaton, C. B., 109
 Eaton, J. K., 351
 Eddy, G. W., 320, 323, 334
 Eden, W. C., 378
 Edwards, R. L., 219, 245
 Egelhaaf, A., 52, 68, 67
 Ehrlich, H., 210
 Eidmann, H., 102
 Ejercito, A., 424, 428
 Ekblom, T., 103
 Elens, A. A., 192
 Elgee, D. E., 286, 290, 292, 293, 295
 Elliott, E. A., 128
 Ellis, H. W., 116
 Elmore, J. C., 373
 el Shatoury, H. H., see Shatoury, H. H. el
 El-Ziady, S., 142, 147, 155
 Emden, F. I. van, 109, 128
 Emerson, A. E., 77, 81, 162, 184, 210, 227
 Emerson, R. B., 379
 Engelmann, F., 48
 Ergle, D. R., 381
 Ermin, R., 2, 6
 Erwin, D. C., 366, 369
 Erwin, W. R., 330, 331
 Esch, I. van, 29
 Escherich, K., 109
 Eschirich, B., 68
 Eskey, C. R., 399
 Essig, E. O., 183, 254
 Eugster, C. H., 61
 Eulitz, F., 66
 Evans, A. C., 141
 Evans, C. A., 398
 Evans, H. E., 94, 216, 227, 228
 Evans, V. G., 31
 Evenhuis, H. H., 144
 Evlakhova, A. A., 281
 Ewing, H. E., 392
 Eyer, J. R., 344, 345
 Eyles, D. E., 419
- F**
- Faber, A., 119, 221
 Fahey, J. E., 346, 347, 348
 Falck, R., 104
 Faldini, J. D., 280
 Farid, M. A., 424, 426, 427, 428, 429
 Faust, E. C., 407, 420, 422, 423, 424, 425, 426, 427, 428, 429
 Fawcett, H. S., 183
 Fay, R. W., 325, 326, 327
 Feder, N., 33
 Felt, E. P., 103, 109
 Feng, L. C., 426
 Fernald, H. T., 195, 371
 Ferris, G. F., 78
 Fester, G. A., 62
 Fick, R., 62
 Fidler, J. H., 374
 Fidler, W. E., 68
 Filmer, R. S., 372
 Finlayson, D. G., 366, 373, 374
 Finlayson, L. H., 224
 Finney, G. L., 166
 Fiori, B., 347
 Fischer, I., 20, 28
 Fischer, L., 424, 425
 Fisher, F. E., 281, 292
 Fisher, R. W., 312, 333
 Fisher, T. W., 184, 236, 284
 Fisher, W. S., 101, 111
 Fiske, W. F., 127, 128

- Fitzgibbon, M., 366
 Fitzhugh, O. G., 333
 Fitz-James, P., 279, 289
 Fjeldalen, J., 355
 Flanders, S. E., 163,
 165, 166, 167, 169, 170,
 171, 173, 176, 177, 178,
 243, 257
 Flaschenträger, B., 43
 Fleck, E. E., 324
 Fleming, W. E., 322, 329
 Fletcher, F. W., 363
 Flik, H. M., 355
 Flitters, N. E., 200
 Floch, H., 422, 423, 426
 Flock, R. A., 327
 Florey, E., 307
 Florkin, M., 9, 24
 Floyd, E. H., 78, 373
 Fluke, C. L., 351
 Fogh, T. W., see Weis-Fogh, T.
 Fonseca, J. P. da, 120
 Forbes, A. R., 374
 Forbes, S. A., 123, 128
 Ford, E. B., 65
 Forgash, A. J., 315
 Forrest, H. S., 52, 66, 67
 Forster, W., 52
 Fowler, K. S., 306, 310,
 312
 Fox, C., 408
 Fox, C. J. S., 281
 Fox, H., 187, 197
 Fox, I., 392, 401
 Fox, R. M., 427
 Fox, W. B., 371
 Fraenkel, G., 53, 143, 152,
 187
 Francis, E., 399
 Frankenfeld, J. C., 324
 Franssen, C. J. H., 111,
 113
 Franz, E., 122
 Franz, J., 144, 278, 284,
 285, 292, 293
 Frawley, J. P., 333
 Free, J. B., 45, 208, 210
 Freeman, G. H., 354
 Freeman, R. B., 408
 Freeman, T. N., 79, 95
 French, R. G., 380
 Frew, J. G. H., 18, 23, 33
 Friedman, F., 23, 29, 34
 Frings, H., 209
 Frings, M., 209
 Frisch, K. von, 46, 210,
 225
 Fröblich, G., 53
 Froggatt, W. W., 110
 Frontali, N., 311
 Frost, M. H., Jr., 373
 Frost, S. W., 344
 Füchtbauer, H. S., see
 Swart-Füchtbauer, H.
 Fukami, J., 304, 315
 Fukuto, T. R., 303, 311,
 313, 379
 Fullaway, D. T., 112, 253,
 260, 262, 265, 267,
 268, 270, 271
 Fuller, C., 111, 120
 Fuller, F. B., 399
 Fulton, B. B., 89, 227
 Fulton, H. G., 374
 Furman, D. P., 326
 Furniss, R. L., 109
 Furr, R. E., 379
 Fyfe, R. V., 270
 G
 Gabaldon, A., 422, 423,
 424, 429
 Gabe, M., 3, 4, 6, 20, 33
 Gahan, C. J., 111, 119,
 124, 125
 Gahan, J. B., 325, 326
 Gambrell, F. L., 350
 Gambrell, R. G., 353, 354
 Gahan, D., 422, 426
 Ganapathipillai, A., 423,
 427
 Gannon, N., 327
 Gardiner, B. O. C., 363,
 378, 379, 380
 Gardiner, L. M., 117, 118
 Gardner, J. C. M., 262
 Gardner, T. R., 167, 261
 Garman, H., 129
 Garman, P., 344, 352,
 353
 Garmus, R. D., 327
 Garthside, S., 251, 259,
 265
 Gasser, R., 353, 355
 Gauldin, M. E., 20, 22,
 23, 28, 33
 Gause, G. F., 201, 242,
 248
 Gauthier, J. C., 394
 Gavrilov, W., 20, 28
 Gayspitz, K. F., 164
 Geier, P., 349
 Gelfand, H. M., 423, 427
 Gerberg, E. J., 115
 Gerhardt, R. W., 283
 Gerok, W., 41
 Gerould, J. H., 82
 Gersdorf, W. A., 330, 331
 Ghulamullah, 238
 Giannotti, O., 309
 Gibbons, D. A., 47
 Gibson, F. J., 95
 Gilbert, I. H., 326
 Gillies, M. T., 419, 420,
 423, 429
 Gilmer, R. M., 350
 Ginsberg, S., 313
 Girth, H. B., 278
 Gjulian, C. M., 186, 187,
 198
 Glaser, R. W., 18, 22, 25,
 33, 34, 65
 Glasgow, H., 373, 374
 Glass, E. H., 279, 293,
 347, 348, 349
 Glock, G. E., 315
 Glusenkow, N. A., 346
 Goette, M. B., 326
 Goillot, C., 52
 Gojmerac, W. L., 378
 Goldberg, L., 53
 Goldschmidt, R., 17, 18,
 33
 Gonda, O., 304
 Good, N. E., 392, 402
 Goodchild, A. J. P., 32
 Gooden, E. L., 279
 Goodwin, T. W., 60, 61,
 68, 69
 Gordon, H. T., 306
 Gorjaceva, E. P., 352
 Goryushin, V. A., 374
 Gorzycki, L. J., 379
 Gostick, K. G., 323
 Goto, A., 327
 Goto, M., 66
 Gottlieb, D., 381
 Gottschewski, G., 20, 28
 Götz, B., 40, 43
 Gough, H. C., 374
 Gould, E., 345, 354
 Gounelle, E., 127
 Gowdey, C. W., 308
 Gowen, J. W., 175, 176
 Grace, T. D. C., 17-38:
 21, 22, 23, 25, 26, 27,
 28, 29, 30, 31, 32, 34
 Graf, J. E., 194
 Graham, C., 349, 353
 Graham, S. A., 94, 102,
 129, 183
 Grahn, M., 311
 Grainger, M. M., 351
 Grandi, G., 110, 111, 112,
 123, 128
 Grandori, R., 355
 Granett, P., 325
 Grassé, P. P., 49, 210
 Grassi, B., 49
 Grassi, G. B., 406
 Green, A. A., 321, 323
 Green, A. L., 313
 Green, G. W., 187, 188
 Green, R. G., 398
 Greenshields, F., 173
 Greenslade, R. M., 378
 Greer, E. N., 324
 Grégoire, C., 9, 10
 Gregory, K. F., 381
 Grenelly, R. E., 381
 Gressitt, J. L., 99, 100,
 102, 110, 111, 112,
 122, 127, 129, 183
 Grewal, M. S., 404
 Griffith, M. E., 424, 429
 Griffiths, J. T., 7, 281,
 292
 Grison, P., 278, 279, 280,

AUTHOR INDEX

- 283, 284, 286, 287, 289,
290
- Grjebine, A., 423, 424, 425,
426, 427, 428
- Groblewski, G. E., 313
- Groot, A. P. de, 47
- Grosch, D. S., 174
- Grossbach, U., 66, 67
- Grosswald, K., 104
- Groves, J. R., 345, 349,
353
- Günder, J. Z., see Ziegler-Günder, J.
- Gunderson, H., 372
- Gunn, D., 110
- Gunn, D. L., 186, 187
- Gunther, C. E. M., 424,
428
- Günther, F. A., 319, 337
- Günther, S., 291
- Gurney, A. B., 78
- Guthrie, F. E., 186, 280,
292
- Guy, E. I., 324
- H
- Haas, A., 46, 48, 208
- Hackman, R. H., 26, 29,
60, 61, 65, 66, 69
- Hadaway, A. B., 200
- Hadorn, E., 52, 66, 67
- Hadwen, S., 404
- Hagen, K. S., 353
- Haine, E., 148, 149, 150
- Haines, T. W., 324
- Halcrow, J. G., 427
- Haldane, J. B. S., 225
- Halfhill, J. C., 291
- Halliburton, W., 103, 105
- Hall, I. M., 277, 279, 280,
281, 282, 283, 284,
285, 286, 288, 290,
291, 292, 293, 295
- Hall, M. J., 354
- Hallemans, A., 351
- Haller, H. L., 43
- Hallowes, K. H., 306
- Hamilton, D. W., 346, 347,
348
- Hamilton, J., 120
- Hamon, J., 423, 424, 425,
426, 428
- Hamstead, E. O., 345, 354
- Hancock, G. L. R., 128
- Handford, R. H., 366, 373,
374
- Hankin, E. H., 394
- Hanks, J. H., 17, 32
- Hanna, R. L., 379
- Hannay, C. L., 279, 289
- Hanser, G., 72
- Haramoto, F. H., 268
- Hardman, J. A., 349
- Hardouin, R., 111
- Harley-Mason, J., 73
- Harlow, P. A., 311
- Harman, S. W., 346
- Harries, F. H., 185, 378,
379, 380
- Harris, E., Jr., 374
- Harris, G. A., 266
- Harris, W. B., 350
- Harrison, A., 311, 312,
313, 314
- Harrison, R. G., 17
- Hart, M. P., 291
- Hartley, G. S., 378
- Hartshore, R., 190
- Hartzell, A., 21, 33, 332,
334, 335, 336
- Harvey, G. T., 313
- Harville, J. P., 292
- Harwood, R. F., 366, 371,
372
- Hasegawa, K., 129
- Haseman, L., 345
- Haskell, P. T., 221
- Hastings, E., 372
- Hathaway, C. R., 392
- Haufe, W. O., 188
- Hawboldt, L. D., 349
- Haydak, M. H., 51, 52, 53
- Hayes, R. O., 26
- Hayes, W. J., 409
- Headlee, T. J., 393
- Healey, M. J. R., 371
- Heathcote, G. D., 151
- Hebard, M., 89
- Hebb, C. O., 312
- Heck, S. V. H., see Von
Hörmann-Heck, S.
- Hecker, E., 40, 41, 42
- Heimpel, A. M., 279, 280,
282, 286, 287, 288, 289
- Hein, G., 225
- Heintze, A., 115, 116
- Heinz, H. J., 212, 226, 229
- Heinze, K., 139, 140, 142,
144, 145, 147, 155, 260
- Heitz, E., 103
- Hellqvist, H., 374
- Hellyer, G. C., 314, 315
- Helson, G. A. H., 236
- Henderson, C. F., 354
- Henson, W. R., 188
- Heran, H., 210, 225
- Heriot, A. D., 345
- Herman, C. M., 404
- Hernandez, L. U., see
Ureña Hernandez, L.
- Herrick, G. W., 103, 109
- Hervey, G. E. R., 279,
289, 293, 366, 373
- Hess, A. D., 110, 128,
424, 428
- Hesse, R., 183
- Hewlett, P. S., 323
- Heymann, H., 66
- Hibbard, H., 19
- Hijner, J. A., 142
- Hilchev, J. D., 334, 335,
336
- Hill, A. R., 146
- Hill, C. H., 349
- Hill, G. P., 141
- Hills Ris Lambers, D.,
152, 153, 154, 155,
156
- Hills, F. J., 367
- Hills, O. A., 380
- Hinds, W. E., 194
- Hinton, H. E., 10, 235
- Hirata, Y., 66
- Hiratsuka, E., 141
- Hironaka, M., 266
- Hirst, L. F., 409
- Hoare, C. A., 404
- Hobbiger, F., 313
- Hodgkin, E. P., 422, 423,
424, 425, 427, 429
- Hodson, A. C., 184, 185,
352
- Hoffman, W. E., 110
- Hofmaster, R. N., 366,
367, 373
- Hogan, T. W., 346
- Holbrook, D. V., 313
- Holdaway, F. G., 189, 195
- Holland, G. P., 391, 392
- Hollande, A. C., 1, 65,
- 116
- Holloway, J. K., 251, 258,
266, 269
- Holmes, E., 356
- Holmes, R., 313
- Holmstedt, B., 311
- Hoof, H. A. van, 142, 151
- Hopkins, A. D., 106, 183,
189, 194, 199
- Hopkins, A. R., 379
- Hopkins, D. E., 334
- Hopkins, G. H. E., 390,
392, 407
- Horikawa, M., 11
- Horn, O., 104
- Hornstein, I., 320, 324, 328
- Horsfall, W. R., 420, 422,
423, 424, 425, 426, 427,
428, 429
- Horton, J. R., 110
- Hosaka, E. Y., 268, 269,
270, 272
- Hoskins, W. M., 320, 326,
327, 330, 331
- Hough, W. S., 283, 346,
348, 349
- Houlbert, C., 109
- House, H. L., 165
- Hovanitz, W., 82
- Howe, R. W., 184, 190, 200
- Howe, W. L., 366, 367, 373
- Howitt, A. J., 374
- Hoy, J. M., 259, 268, 285,
288, 291
- Hoyle, G., 25, 311
- Hoyt, S. C., 347, 348, 350,
354, 355
- Hrdý, I., 4
- Hsieh, H., 424, 426
- Hsu, S. C., 426

- Hubanks, P. E., 333
 Hubbard, C. A., 392
 Hubbard, H. G., 110
 Hubbell, T. H., 81, 82, 83,
 86, 87, 89
 Huber, F., 209, 212, 214,
 215, 217, 221
 Hudson, G. V., 101, 102,
 122
 Hueck, H. J., 353, 354
 Huff, C. G., 7
 Huffaker, C. B., 251-76;
 235, 242, 243, 251, 252,
 253, 254, 256, 257, 258,
 259, 266, 269
 Hughes, J. H., 420
 Hughes, K. M., 284
 Human, J. P. E., 62, 63,
 64
 Humphries, K. P., 372,
 378
 Hungerford, H. B., 110
 Hurpin, B., 291
 Husain, M. A., 110
 Husain, M. Z. Y., 423, 428
 Hutchinson, A. H., 190
 Huxley, J. S., 255
 Huysmans, C. P., 351
- I
- Iglinsky, W., Jr., 378
 Ilse, D., 220, 222
 Imms, A. D., 251, 253,
 254
 Imagami, K., 42, 72
 Ingalsbe, D. W., 332
 Ingles, L. G., 102
 Inhoffen, H. H., 43
 Ioff, I., 405, 408, 409
 Ioff, I. G., 392, 393, 402,
 409
 Irzykiewicz, H., 141, 142
 Isakova, N. P., 288
 Ishii, T., 305
 Ishikura, H., 322, 327
 Ito, Y., 140, 145
 Ivy, E. E., 378, 379
 Iwasa, T., 201
 Iyengar, M. O. T., 424,
 425, 427, 428
 Izotova, T. E., 374
- J
- Jackson, C. H. N., 196
 Jackson, E. B., 26
 Jacobs, S. E., 280
 Jacobs, W., 209, 227
 James, P. F., see Fitz-James, P.
 Jameson, E. W., Jr., 392
 Jameson, H. R., 371
 Jander, R., 210, 225
 Janet, C., 1
 Janisch, E., 185, 284, 292,
 295
 Janjua, N. A., 110
 Janvier, H., 259
 Jaques, R. P., 281
 Jarczyk, H. J., 43
 Jaynes, H. A., 187, 236
 Jeager-Draafsel, E., 354
 Jeffery, G. M., 419
 Jellison, W. L., 389-414;
 392
 Jensen, V., 378
 Jerrel, E. A., 279, 289
 Jewett, H. H., 324
 Johannson, O. A., 371
 Johansson, A. S., 11
 Johansen, C. A., 328
 Johansson, T. S. K., 51
 Johnson, A. W., 62, 63,
 64
 Johnson, B., 148, 149,
 150, 151
 Johnson, C. G., 148, 149,
 150
 Johnson, D. R., 378
 Johnson, G. A., 379
 Johnston, C. D., 303
 Jones, D. B., 52
 Jones, D. P., 364, 369, 371,
 372, 374, 378
 Jones, E. W., 378
 Jones, F. G. W., 167, 367,
 372, 378
 Jones, F. M., 123, 126, 128
 Jones, H. A., 323, 324,
 331
 Jones, J. C., 2, 3, 4, 5,
 9, 13
 Jones, L. R., 336
 Jordan, K., 392
 Joshi, B. S., 63
 Jourdeuil, P., 378
 Jouret, L. H., 103
 Jover, H., 128
 Joyeux, C., 406
 Jucker, E., 60
 Judah, J. D., 303
 Judd, W. W., 285
 Junge, H., 60, 61, 68
- K
- Kaiser, P., 51
 Kaissling, K.-E., 42
 Kakizawa, H., 66
 Kalf, G. F., 26
 Kalminus, H., 46, 210, 211,
 211, 216, 217, 223
 Kämmerer, H., 62
 Kannan, K. K., see Kunhi-Kannan, K.
 Kantack, E. J., 366, 380
 Kantzies, J. G., 373
 Karafiat, H., 144
 Karandakar, K. R., 110
 Karlson, P., 39-58; 50, 53,
 69
 Karrer, P., 52, 60, 61,
 66, 67
 Kartman, L., 326
 Kaszab, Z., 119
 Kawase, S., 68
 Kearns, C. W., 303, 305,
 306, 307, 309, 310,
 315
 Kearns, H. G. H., 350
 Keen, F. P., 102, 103, 109
 Kellogg, W. H., 396
 Kelsey, J. M., 279
 Kemner, N. A., 99, 111,
 116
 Kemp, H. K., 346
 Kemper, H., 7
 Kendigh, S. C., 192
 Kendrick, J. B., Jr., 367,
 381
 Kennedy, A. H., 406
 Kennedy, J. S., 139-60;
 140, 142, 143, 145, 146,
 147, 148, 149, 150, 151,
 152, 153, 155, 218
 Kennett, C. E., 235, 242,
 251, 252, 256, 266
 Kenten, J., 313
 Kepner, R. A., 372
 Kerr, W. E., 175
 Ketchel, M. M., 22, 30, 33
 Kewitz, H., 313
 Key, K. H. L., 89
 Keys, T. E., 391
 Khan, A. W., 110
 Khan, M. H., 197
 Kilpatrick, J. W., 324, 327
 Kimmey, J. W., 109
 King, H. L., 322
 King, J. L., 110
 King, K. M., 371, 374
 King, R. C., 23
 King, W. V., 332
 Kirby, A. H. M., 346, 351,
 353, 354
 Kirk, H. B., 118
 Kirnhuber, P., 338
 Kitzmiller, J. B., 93, 94
 Klein, A. K., 331, 338
 Kleine, R., 128
 Kloke, A., 329
 Kloot, L. A., Jr., 371, 372
 Klots, A. B., 78, 82
 Knight, H. H., 65
 Kipling, E. F., 323, 344
 Knull, J. N., 112, 118, 125
 Knuth, P., 116
 Knutson, H., 366, 380
 Kobayashi, H., 424, 427
 Koch, A., 144
 Kocher, C., 330, 338
 Koehler, B., 364
 Koelle, G. B., 313
 Koepke, J. A., 401
 Kohls, G. M., 401
 Kohring, V., 19
 Koide, M., 337
 Koidsumi, K., 190, 199,
 200, 286

AUTHOR INDEX

- Kojima, T., 99, 111, 120, 122, 129
 Kokomoor, K. L., 28
 Kollros, J. J., 306, 307, 310, 311
 Konar, G., 280
 König, M., 214
 Kopcech, G., 17
 Köppen, W., 189
 Korte, F., 66
 Kortzas, C. B., 120
 Kotzschmar, A., 68
 Kotte, W., 344
 Koula, V., 344
 Kováčević, Ž., 284, 292, 295
 Koyama, R., 129
 Kozhanchikov, I. V., 184, 185, 186, 191
 Kramer, M., 380
 Kratz, F. W., 429
 Krause, G., 23
 Krauss, N. L. H., 261
 Kremer, J., 1
 Krestenset, E. R., 353
 Krieg, A., 278, 280, 284, 285, 287, 289, 292, 293
 Krijgsman, B. J., 315
 Kriner, E. R., 348
 Krishnamurthy, B. S., 423, 427
 Krishnan, K. S., 422, 423, 424, 427
 Krishnaswami, A. K., 425, 427
 Krogerus, R., 102
 Krüger, E., 208
 Kubota, K., 199
 Kudrina, M. A., 374
 Kuennen, D. J., 352, 353, 354
 Kugler, H., 221, 224
 Kühn, A., 52, 66, 67
 Kuhn, R., 61
 Kulash, W. M., 324, 372
 Kullenberg, B., 44, 46, 217, 225
 Kunhi Kannan, K., 110
 Kunkel, A. M., 313
 Kunze, F. M., 331, 338
 Kuroda, Y., 23, 33
 Kyao, I. I., 164
- L
 Laarman, J. J., 219, 224
 La Casse, W. J., 94, 423, 424, 429
 Lack, D., 245
 Lagrange, E., 393
 Laidlaw, H. H., Jr., 175
 Laing, J., 187
 Laird, M., 428
 Lal, R., 145
 Lamb, K. P., 143
 Lambers, D. H. R., see Hille Ris Lambers, D.
- Lameere, A., 100, 121, 123, 126
 Landi, J., 184, 236, 238
 Landis, B. J., 194
 Lane, F., 120, 122, 125
 Lane, M. C., 363, 364, 371
 Lange, A. W., 266
 Lange, H. H., 3
 Lange, R., 49, 52
 Lange, W. H., 363-88; 349, 363, 364, 366, 367, 368, 369, 371, 372, 373, 378, 380
 Languijillon, J., 423, 424, 426
 Lapied, M., 293
 La Plante, A. H., 352
 Larchenko, K. I., 1
 Larschenko, K., 10
 Larsen, E. B., 192
 Larson, C. L., 398
 Larson, J. D., 278, 290
 Lathrop, F. H., 186, 344, 352
 Laug, E. P., 323, 330, 331, 333, 338
 Laugenbuch, R., 285
 Lavoipierre, M., 53
 Law, R. G., 406
 Layne, G. W., Jr., 350
 Lazarenko, T., 1, 2, 10, 18, 33
 Lea, A. M., 110, 125
 Leach, L. D., 364, 366, 367, 368, 369, 371, 372, 373
 Leake, C. D., 34
 Lecompte, J., 45, 46, 208, 210, 219, 221, 224
 LeConte, J. L., 116, 118
 Lederer, E., 60, 66, 68
 Lederer, G., 220
 Leech, H. B., 109, 120
 Lees, A. D., 140, 147, 164, 165, 353
 Lefroy, H. M., see Maxwell-Lefroy, H.
 Legay, J. M., 141
 Legge, J. W., 69
 Lehrman, D. S., 207
 Leighly, J., 184, 186, 188, 195, 198, 236
 Le Masne, G., 210
 Lembach, J. V., 325
 Lemberg, R., 69
 Lemoigne, M., 280, 287, 290
 Lepesme, P., 110, 111, 112, 119, 122, 123, 125, 128
 Lesne, P., 111
 Lewis, D. J., 423, 424, 429
 Lewis, M. R., 18, 25, 28, 33
 Lewis, S. E., 303-18; 306, 310, 311, 312
 Lex, T., 225
 Lexow, S., 62
 L'Helias, C., 2
 Lhoste, J., 3, 4, 6
 Liebman, E., 6
 Liebster, G., 351
 Lienk, S. E., 354, 355
 Lieu, K. O. V., 110
 Light, S. F., 49, 50
 Likely, G. D., 22, 25
 Lilly, J. H., 363, 372, 373
 Lima, A. da C., see Costa Lima, A. da
 Lin, S., 184, 185
 Lindauer, M., 210, 225
 Lindemann, C., 143, 145
 Linden, M. von, 69, 70
 Lindgren, D. L., 200
 Lindquist, A. W., 323, 324, 325, 326
 Lindroth, C. H., 99, 189
 Lindsay, D. R., 324
 Linell, M. L., 102, 111
 Link, V. B., 396, 397, 402
 Linsley, E. G., 99-138; v, 77, 84, 88, 95, 99, 100, 101, 103, 105, 108, 109, 118, 120, 124, 126, 327
 Linzen, B., 72
 Lipa, J. J., 283, 285, 294
 Lipke, H., 53, 143, 152
 Liston, W. G., 395
 Liu, C. Y., 392
 Lloyd, D. C., 168, 272
 Lloyd, E. P., 379
 Lloyd, N. C., 351
 Locker, B., 392
 Lockley, R. M., 403
 Loeb, M. J., 21, 24, 25, 27, 30, 32, 33
 Loeser, E., 52, 66, 67
 Lohmeyer, V. K., 347, 348
 Long, W. H., 372
 Lopez-Neyra, C. R., 406
 Lord, F. T., 237
 Lord, K. A., 313
 Loschiavo, S. R., 225
 Lotka, A. J., 416
 Lotmar, R., 12
 Loughheed, T. C., 24, 26
 Louis-Marie, Pére, 260
 Lovas, B., 287, 289
 Lovell, J. H., 116
 Lower, H. F., 285
 Lucas, C. C., 52
 Ludwick, C. F., 323
 Ludwig, C., 185
 Ludwig, D., 26, 185, 186, 195, 304, 321
 Lukasiak, J., 423, 428
 Lukoschus, F., 53
 Lukyanovich, F. K., 184
 Lundberg, S., 109
 Lundgren, L., 219
 Lunsford, C. J., 406
 Lüscher, M., 20, 24, 33,

- 49, 50, 51, 210, 225
 Lutz, F. E., 89
 Lyche, H. T., see Tambs-Lyche, H.
 Lyon, R. L., 109
 Lysenko, V. F., 423, 424, 429
- M**
- McAlister, H. V., 347
 McAlister, L. C., Jr., 323
 McAllan, J. W., 144
 McArthur, J., 423, 428
 McBurnie, H. V., 354
 McCabe, P. J., 277, 279, 290
 Macchiavello, A., 409
 McClanahan, R. J., 373, 374
 McConnell, E., 280, 283, 286, 289
 McCoy, G. W., 398
 Macdonald, G., 415, 416, 418, 419, 422, 424
 Macdonald, S. F., 62, 63, 64
 McDuffie, W. C., 326
 McEwen, F. L., 279, 289, 293, 366, 373
 Macgillivray, J. H., 367
 McGregor, I. A., 423, 426
 McGregor, W. S., 334
 Machado, W., 345
 Machay, M. L., 282, 283, 284, 287, 289
 McIvor, B. C., 407
 McKay, M. A., 306, 312, 313, 314, 315
 McKeown, K. C., 101, 102, 117
 McKerras, M. J., 425
 McKinlay, K. S., 351
 McLean, D. M., 380
 MacLellan, C. R., 349
 MacLeod, D. M., 129, 281, 282, 285, 287, 291
 McLeod, J. A., 406
 McLeod, J. H., 239
 McMahon, M. C., 398
 McPhail, M., 190
 MacPhee, A. W., 237
 MacSwain, J. W., 109, 327
 Madden, A. H., 323, 324
 Madson, H., 408
 Madsen, H. F., 347, 348, 349, 350, 354, 355
 Maehler, K. L., 259
 Magnus, D., 43, 209, 220
 Maier, P. P., 324
 Mail, G. A., 187
 Mailoux, M., 349
 Maines, W. M., 322, 329
 Mainland, G. B., 81, 84
 Majumder, S. K., 280, 285, 287
 Makino, K., 42
- Maltais, J. B., 142
 Manadhar, T. L., 423, 428
 Manger Cats, V. de M.-, see Meester-Manger Cats, V. de
 Mani, M. S. 110
 Mann, H. D., 333
 Manning, A., 216, 224, 225
 Mansfeld, K., 189, 197
 Manson, G. F., 371
 Mansour, K., 103, 104
 Mansour-Bek, J. J., 103, 104
 Manunta, C., 60, 61, 64, 65
 Manwell, R. D., 415, 417, 418, 419, 422
 Maple, J. D., 179
 Marais, S. J. S., 264
 Maramorosch, K., 32, 34
 March, R. B., 304, 309, 311, 379
 Marcovitch, S., 145
 Marcus, O., 118, 119
 Marcus, P. I., 21, 25
 Marcuzzi, G., 196
 Marie, Pére L., see Louis-Marie, Pére
 Markkula, M., 140, 145, 147
 Marshall, J., 346, 357
 Martignoni, M. E., 32, 278, 279, 284, 286, 289, 294, 295
 Martin, C. H., 185
 Martin, C. J., 395
 Martin, H., 351
 Martonne, E. de, 189
 Martouret, D., 279, 280, 287, 290
 Masaitis, A. I., 371
 Masera, E., 288, 294
 Mason, H. S., 73
 Mason, J. H., see Harley-Mason, J.
 Massee, A. M., 344, 350, 351, 356
 Mastbaum, O. J., 423, 429
 Mathew, M. I., 424, 427
 Mathis, W., 324
 Matsuura, S., 66
 Matthes, E., 218
 Matthewman, W. G., 373
 Mattson, E. L., 379
 Maxcy, K. F., 400
 Maxon, M. G., 311, 379
 Maxwell, T. A., 407
 Maxwell-Lefroy, H., 110
 May, A. W. S., 111, 347
 Mayer, G., 212
 Mayer, H., 209, 219
 Mayet, V., 110
 Mayor, E., 77, 79, 81, 83, 84, 85, 86, 88, 95, 106
 Meadowley, G. R. W., 266
 Meester-Manger Cats, V. de, 140
- Meeuse, B. J. D., 209, 219
 Meiffert, R. L., 345
 Mehra, R. N., 110
 Meillon, B. de, 53, 423, 424, 425, 426, 427, 428, 429
 Meira, M. T. V. de, 426
 Meislisch, E. K., 313
 Melampy, R. M., 52
 Melander, A., 356
 Mellanby, K., 130
 Melzer, J., 122
 Mendizabal, M., 110
 Menon, K. P. V., 281, 287, 291
 Menon, M. A. U., 424, 427
 Merkel, M. E., 379
 Merrell, D. J., 322
 Merriam, C. H., 189, 191
 Merrill, L. G., 367
 Merritt, J. M., 381
 Messenger, P. S., 183-206, 200, 327
 Metcalf, R. L., 68, 69, 303, 304, 309, 311, 325, 379
 Metselaar, D., 422, 423, 424, 425, 427, 428, 429
 Meuchel, J., 266
 Meyer, A., 189
 Meyer, K. F., 397
 Michelbacher, A. E., 184, 188, 195, 198, 236
 Micks, D. W., 95
 Millara, P., 20
 Miller, D., 253, 254, 255, 257, 259, 266, 268, 269, 270, 271
 Miller, D. D., 94
 Miller, G. L., 44
 Miller, J. M., 109
 Miller, L. A., 373, 374
 Miller, N. C. E., 111
 Milliron, H. E., 239
 Mills, H. B., 184
 Mills, W. D., 352
 Milne, A., 144, 235, 236, 251
 Milum, V. G., 225
 Misra, B. G., 424, 427
 Mitchell, H. K., 52, 66, 67
 Mitchell, L. C., 331, 338
 Mitchell, W. C., 373
 Mittelstaedt, H., 212
 Mittler, T. E., 140, 141, 142, 143, 145, 147
 Miyajima, S., 337
 Mjoberg, E., 117
 Moericke, V., 148, 149, 150, 151
 Moise, R., 429
 Moore, J. A., 84
 Moore, N. W., 208
 Mooser, H., 399, 400, 401
 Mordvilko, A. K., 140, 152, 154
 Morgan, A. C., 111
 Morgan, C. V. G., 117, 354, 357

AUTHOR INDEX

- Morgan, J. F., 24, 30
 Morgenthaler, P. W., 5
 Morley, C., 128
 Morris, M., 266
 Morris, M. G., 324
 Morris, R. F., 236
 Morrison, F. O., 321
 Morrison, H. E., 371
 Morrison, P. E., 304, 309
 Morton, H. J., 24
 Moszman, J., 22
 Mostafa, K. A., 379
 Mouchet, J., 423, 424, 426
 Mount, R. A., 422, 429
 Muesesbeck, C. F. W., 128
 Muir, F., 251
 Muir, R. C., 354
 Muirhead-Thomson, R. C.,
 423, 424, 425, 428
 Muldrew, J. A., 7, 170
 Mules, M. W., 403
 Müller, G., 66
 Müller, H. J., 80, 145, 149,
 150, 151
 Müller, W., 104
 Mullins, L. J., 306, 307,
 309
 Muma, M. H., 281, 292
 Mune, T. L., 253, 261, 262
 Munger, F., 185
 Munroe, R. J., 372
 Munson, S. C., 2, 11, 12
 Murray, M. R., 17, 18
 Murthi, B. K., 110
 Müssbichler, A., 47
 Muthu, M., 280, 285, 287
 Muthukrishnan, T. S., 263
 Myers, I., 52
- N
- Nachmansohn, D., 312, 313
 Nagasawa, S., 319-42
 Naidu, M. B., 215
 Nakajima, M., 324
 Naqvi, S. H., 423, 428
 Narahashi, T., 305, 309
 Narayanan, E. S., 170, 263
 Nardy, R. V., 321
 Nash, R., 322
 Nash, T. A. M., 190, 196
 Natti, J. J., 366, 367, 373
 Naudé, T. J., 264
 Nauk, E. G., 34
 Nawa, S., 66, 68
 Neander, A., 117
 Neill, M. H., 400
 Neklesova, I. D., 374
 Nelson, R. H., 324, 330,
 331
 Nelson, W. L., 366, 371,
 372
 Neubert, G., 70
 Neururer, J., 323
 Newcomer, E. J., 344, 345,
 346, 347, 350, 355
 Newlin, O., 367, 369
- Newman, J. F., 330, 332,
 339
 Newsom, L. D., 78, 379
 Newton, W. L., 405
 Neyra, C. R. L., see Lopez-
 Neyra, C. R.
 Nguyễn-Cong-Tiều, 110
 Nicholson, A. J., 126, 235,
 236, 241, 243, 245, 247,
 251, 253
 Nieglisch, A. D., 45
 Nielsen, A. T., 210
 Nielsen, E. T., 210, 228
 Nielsen, M. M., 283, 286
 Nielsen, M. W., 140
 Niesiolowski, W., 117
 Niklas, O. F., 278, 279,
 285
 Nirula, K. K., 281, 287,
 291
 Nixon, M., 22
 Nixon, H. L., 142, 144, 147
 Noiret, C., 49
 Nolan, K., 330, 331
 Noll, J., 185
 Nomura, K., 189
 Norton, L. B., 324, 348
 Nugent, T. J., 366, 367,
 373
 Nuorteva, P., 142, 144
 Nuttall, G. H. F., 394
 O
- Oberholzer, R. J. H., 215
 O'Brien, R. D., 303, 311,
 314
 Ochsé, W., 10
 O'Connor, B. A., 253, 261,
 262
 Odland, M. L., 373
 Oertel, E., 1
 Ogata, M., 394
 Ogden, D. B., 378
 Ögel, S., 4
 Ohuye, T., 11
 Okai, I. N., 280
 Okay, S., 61, 65, 69
 Oku, M., 60
 Olarte, J., 399
 Olliiff, A. S., 110
 O'Loughlin, G. T., 347
 Olsufiev, H. G., 398
 Oman, P. W., 90
 Oppenorth, F. J., 322
 Osborn, H. T., 259, 352
 Ossowski, L. L. J., 279,
 287, 290, 291
 Oudemans, A. C., 392
 Ozaki, K., 322, 327
- P
- Paillet, A., 120
 Pain, J., 47, 49, 225
 Paine, R. W., 267
 Painter, H. R., 128
- Painter, R. H., 142, 145
 Pal, R., 324, 325, 422, 423,
 424, 425, 426, 427, 428,
 429
 Palacios, M., 422, 424, 427
 Palliot, A., 18
 Palm, C. E., v, 346
 Palm, N. B., 10
 Palm, T., 102, 109
 Palmer, L. S., 65
 Pankaskie, J. E., 321, 331,
 334
 Paradis, R. O., 351
 Paramanow, S., 111
 Parki, L., 210
 Parencia, C. R., Jr., 379
 Parham, J. W., 253, 261,
 262
 Park, O., 77, 81, 112, 162,
 184
 Park, O. W., 175, 176
 Park, T., 77, 81, 162, 184,
 248
 Parker, H. L., 166, 236,
 372
 Parker, R. C., 17, 24, 30,
 32
 Parkin, C. A., 321, 323
 Parkin, E. A., 103, 104,
 105, 363
 Parrish, C. P., 378
 Parsons, W. T., 266
 Passager, P., 424
 Pastrana, J. A., 280
 Patch, E. M., 371
 Pathak, M. D., 142
 Patterson, J. T., 82, 83,
 93
 Patterson, N. A., 349
 Paulian, R., 102, 128
 Paullin, J. E., 400
 Payne, M. A., 19
 Payne, N. M., 238
 Peairs, L. M., 191
 Pechuman, L. L., 110
 Peck, O., 94
 Pedersen, M. W., 259
 Peel, A., 141
 Peffly, R. L., 326
 Pelecassis, E. D., 120
 Pepper, J. H., 190, 194
 Perdeck, A. C., 209
 Pérez, C., 6
 Perez, M. Q., see Quilis
 Perez, M.
 Perkins, R. C. L., 254,
 255, 258, 260, 261
 Perttunen, V., 2
 Pesqueira, M. E., 422, 427
 Pesson, P., 5, 13
 Peters, D. C., 142
 Peters, H. M., 212, 227
 Peters, W., 423, 424, 427,
 428
 Petersen, B., 219, 220
 Peterson, G. M., 183
 Peterson, L. O. T., 118, 127

- Peterson, W. H., 381
 Pettey, F. M., 112, 252,
 253, 264
 Peyerimhoff, P. de, 106
 Pfeiffer, H. H., 19, 20
 Pfrimmer, T. R., 379
 Philip, C. B., 399
 Phillips, G., 292
 Phillips, C. M., 280
 Phillips, J., 259
 Pickles, A., 236
 Peipho, H., 216
 Pierce, W. D., 190
 Pimentel, D., 324
 Pingale, S. V., 280, 285,
 287
 Piquett, P. G., 333
 Planet, L., 129
 Platt, R. B., 186
 Plavilstshikov, N. N., 116,
 117
 Plotz, H., 400
 Plummer, C. C., 194
 Poisson, R., 1, 5, 13
 Polanyi, M., 357
 Polen, P. B., 336
 Polivka, J. B., 279, 285,
 290
 Pollard, D. G., 111
 Pollitzer, R., 397, 409
 Pomerat, C. M., 17, 32,
 34
 Popov, I. D., 381
 Porter, B. A., 344
 Porter, C. E., 101
 Porter, J. E., 420
 Postiglione, M., 422, 423,
 424, 426
 Potter, C., 313, 321, 371,
 374
 Potts, S. F., 43
 Powsner, L., 185
 Poyarkoff, E., 14
 Pradhan, S., 185, 321
 Pratt, H. D., 402
 Prebble, M. L., 192
 Precht, H., 218
 Predtetchenskii, S. A., 189,
 191
 Prescott, J. A., 189
 Preston, A. P., 350, 354
 Price, W. A., 324
 Price, W. H., 34
 Prince, F. M., 398, 399
 Pringle, G., 423, 424, 426,
 427
 Pringle, W. L., 260,
 266
 Pritchard, A. E., 354
 Proverbs, M. D., 321
 Pruthi, H. S., 110
 Pryor, M. R., 266, 269
 Przibram, H., 60, 68
 Psota, F. J., 126
 Puck, T. T., 21, 25
 Purmann, R., 65, 66
 Pyenson, L., 352
- Q
- Quartermar, K. D., 327
 Quayle, H. J., 183, 198
 Quayle, J. R., 63
 Quilis Perez, M., 190
 Qutub-ud-Din, M., 423, 428
- R
- Rabb, R. L., 280, 292, 294
 Rachou, R. G., 422, 423,
 425
 Radha, K., 281, 287, 291
 Rafaila, C., 381
 Raffensperger, E. M., 372
 Rabag, H. A., 34
 Rahim, A., 423, 424, 425
 Rainwater, C. F., 378
 Ramachandran, S., 110
 Ramakrishna, V., 422, 427
 Ramsay, R. W., 26
 Ramsey, L. L., 331, 338
 Rao, H. H., 111
 Rao, V. V., see Venkat
 Rao, V.
 Raschig, H., 52
 Rasmussen, B., 311
 Ratcliffe, F. N., 403
 Rateau, J., 423, 424, 426
 Raw, F., 371
 Rawlins, W. A., 374, 380
 Raybaud, A., 394
 Reali, G., 355
 Redder, A. M., 335
 Reed, A. C., 407
 Reed, J. R., 379
 Regnier, R., 116
 Rehman, K. A., 110
 Rehn, J. A. G., 89
 Reid, E. T., 428
 Reid, J., 109
 Reid, J. A., 326
 Reigel, A., 259
 Reineck, G., 128
 Reiner, C. E., 278, 289,
 295
 Rembold, H., 52
 Remmert, L. F., 304
 Renner, M., 46, 210, 215,
 225
 Reymond, A., 101
 Reynolds, H. T., 363, 366,
 369, 378, 379, 380
 Rhein, W. v., 51, 53
 Rhodes, A., 381
 Ribbands, C. R., 210
 Ribbands, L. R., 46
 Richards, A. G., 144, 184,
 185
 Richards, O. W., 78, 162
 Richet, P., 422, 424, 429
 Riddick, J. A., 336
 Ridpath, M. G., 381
 Riedel, F. A., 10
 Riker, A. J., 381
 Rings, R. W., 350
- Ripper, W., 104
 Ripper, W. E., 343, 357,
 363, 378
 Ris, H., 20, 33
 Risbec, J., 110
 Ris Lambers, D. H., see
 Hille Ris Lambers, D.
 Ristich, S. S., 373
 Rivers, C. F., 278, 279
 Rivola, E., 423, 424, 426
 Rizki, M. T. M., 5, 7
 Roan, C. C., 186
 Robertson, C., 123
 Robertson, R. L., 379
 Robertson, W. R. B., 18,
 25, 33
 Robins, E. L., 313
 Robinson, T. S., 63
 Rockwood, L. P., 281, 285,
 287, 291
 Roeder, K. D., 303, 305,
 306, 311, 312
 Roegner-Aust, S., 284, 295
 Roemhild, G., 266
 Rohwer, S. A., 128
 Rooseboom, M., 2, 9
 Rösch, G. A., 46
 Rosicky, B., 293, 392
 Ross, H. H., 90, 357
 Ross, J. D., 34
 Ross, R., 416
 Rota, P., 355
 Roth, L. M., 44, 45
 Roth, W., 330, 338
 Rothenbuhler, W. C., 175,
 176
 Rothschild, M., 392, 407,
 408
 Rothschild, N. C., 391, 392
 Roussel, J. S., 379
 Rovelli, G., 406
 Roy, B. B., 422, 427
 Roseboom, L. E., 93, 94
 Rubtzov, I. A., 184, 185,
 189, 190, 192, 196
 Rudd, R. L., 381
 Ruggles, A. G., 102
 Ruiter, L. de, 208
 Ruiz Castro, A., 127
 Rumreich, A., 400, 401
 Rumreich, A. S., 401
 Rungs, C., 117
 Rupert, L. R., 80
 Russell, P. F., 415-34;
 415, 417, 418, 419, 420,
 422, 423, 424, 425, 426,
 427, 428, 429
 Rutland, J. D., 313
 Ryan, F. J., 185
- S
- Saalas, U., 128
 Sabatino, F. J., 337, 338
 Sacharov, N. L., 187
 Sacklin, J. A., 304
 Sailer, R. I., 77

AUTHOR INDEX

- St. Amand, G. S., 32
 Sakagami, S. F., 223
 Saikeld, E. H., 313, 374
 Salt, G., 8, 166, 167, 169,
 171
 Salternik, Z., 423, 424, 427
 Sanborn, C. E., 128
 Sanders, D. F., 425
 Sanderson, E. D., 186, 190,
 191, 192, 193
 Sandias, A., 49
 Sanford, K. K., 22, 25, 32
 Sang, J. H., 24, 27
 Sankey, J. H. P., 188
 Saraiwa, A. C., 111
 Sassuchin, D., 405, 408, 409
 Satoh, K., 42
 Saute, J., 422, 426
 Savage, A. A., 1
 Savary, A., 345
 Savely, H. E., 102, 105,
 128, 130
 Savit, J., 306, 307, 310, 311
 Scales, A. L., 379
 Schaefferenberg, B., 281, 283
 Scheardt, H. H., 324
 Schechter, M. S., 320
 Schenk, A., 280, 287, 290
 Scherer, W. F., 17, 32
 Schiedt, U., 70, 71, 72
 Schiffer, M., 236
 Schilling, E. L., 31
 Schrödte, J. C., 116
 Schlehuber, A. M., 142, 146
 Schmeider, R. G., 175
 Schmid, H., 52
 Schmidt, E. L., 20, 21, 22,
 23, 27, 32, 33
 Schmidt, K. P., 77, 81, 162,
 183, 184
 Schmidt, L., 292
 Schmidt, R. S., 210, 227
 Schmidtmann, M., 18
 Schnathorst, W. C., 368
 Schneider, D., 41, 42
 Schneider, F., 7, 165, 166
 Schneider, G. W., 354
 Schneiderman, H. A., 21,
 22, 24, 25, 27, 28, 30,
 32, 33, 164
 Schneirla, T. C., 210, 215,
 216, 223
 Schoeller, M., 66
 Schomann, H., 103
 Schoof, H. F., 324
 Schroeder, W. T., 366, 367,
 373
 Schuch, K., 104
 Schultz, E. F. Jr., 354
 Schultz, F. N., 62
 Schvester, D., 291
 Schwardt, H. H., 324, 373
 Schwartzman, G., 338
 Schwarz, E. A., 115
 Schwedtfeiger, F., 329
 Schwinck, I., 42, 43, 67,
 217, 220
 Schwtzgebel, R. B., 111
 Scott, H. E., 374
 Scudder, H. I., 324
 Seamans, H. L., 199
 Sellers, W. F., 264
 Sellke, K., 201
 Sengün, A., 42
 Senior-White, R., 422, 427
 Setty, H. T. R., 111
 Sewell, T. G., 259, 268
 Shafik, M., 110
 Shands, W. A., 281
 Shankland, D. L., 310
 Shaposhnikov, G. Ch., 153
 Sharif, M., 392
 Sharma, H. N., 110
 Sharma, M. I. D., 427
 Sharp, D., 119
 Chatoury, H. H. el. 1, 5, 14
 Shaw, E. I., 21, 23, 26, 27,
 29, 33
 Shaw, J. C., 333
 Shedley, D. G., 351
 Shelford, V. E., 102, 124,
 125, 126, 183, 184,
 186, 190, 192
 Shelmine, B., 401
 Shepard, R. F., 188
 Sheppard, N., 63
 Shibata, K., 187, 199
 Shibuya, T., 201
 Shiraki, T., 109, 110, 111,
 112
 Shu-Chen, C., 111
 Shulov, A., 200
 Shute, P. G., 422
 Shvetsova, O. I., 281, 292
 Siegler, E. H., 327, 346,
 350
 Sikes, E. K., 408
 Silveira, M. M. da, 326
 Silverman, P., 336
 Simčič, Č., 429
 Simmonds, F. J., 163, 164,
 169, 259
 Simmonds, H. W., 259, 262,
 267, 272
 Simmons, S. W., 326, 409
 Simond, P. L., 394
 Simpson, G. G., 80
 Simpson, G. W., 281
 Singh, B. N., 110
 Singh, J., 422, 423, 424,
 425, 426, 427, 428, 429
 Sivik, F. P., 324
 Skoblo, I. S., 165
 Smallman, B. N., 306, 311,
 312, 333
 Smaragdova, N. P., 242
 Smirnov, B. A., 281, 291
 Smirnov, D. A., 116
 Smith, A., 423, 429
 Smith, A. D., 190
 Smith, B. D., 144, 151
 Smith, C. E., 373
 Smith, E. J., 313, 344, 345,
 350, 351
 Smith, F. E., 248
 Smith, F. F., 333
 Smith, G. S., see Stace-
 Smith, G.
 Smith, H. J., 313
 Smith, H. P., 253, 259
 Smith, H. S., 166, 183, 236,
 237, 245, 251
 Smith, J. M., 167, 170,
 266
 Smith, K. M., 278, 279
 Smith, L. C., 347, 348
 Smith, L. M., 147
 Smith, O. J., 169, 178, 284
 Smith, R. A., 175
 Smith, R. E., 183
 Smith, R. F., 188, 327
 Snapp, O., 351
 Snodgrass, R. E., 392
 Soenen, A., 350
 Sokolov, A. M., 145
 Sokolova, R. A., 145
 Solomon, M. E., 193, 235,
 236, 251, 356, 357
 Sorby, H. C., 62
 Sörensen, N. A., 61
 Soulage, J., 422, 424, 429
 Speicher, B. R., 173
 Speicher, K. G., 173
 Spencer, E. Y., 303, 311
 Spencer, G. J., 128
 Speyer, E. R., 239
 Spieth, H. T., 229
 Spurway, H., 225
 Srisukh, S., 60, 61, 68, 69
 Srivastava, B. K., 366, 371,
 378
 Stace-Smith, G., 117
 Stage, H. H., 102
 Stahl, W. H., 45
 Stanley, W. W., 379
 Stansbury, R. E., 331
 Starks, K. J., 372, 373
 Starnes, O., 372
 Staub, A., 349
 Staudenmayer, T., 313
 Stavraky, G. W., 308
 Stay, B., 45
 Stebbing, E. P., 108, 118
 Stebbins, G. L., Jr., 77, 81
 Steer, W., 356
 Steiner, L. E., 259
 Steiner, L. F., 346, 353
 Steinhart, W., 424, 425
 Steinhaus, E. A., 103, 277,
 278, 279, 280, 282, 283,
 284, 285, 287, 288, 289,
 292, 293, 294, 295, 408
 Steinhausen, W., 349
 Stellwaag, F., 185
 Stelzer, L. R., 351+
 Stenseth, C., 355
 Stephens, J. M., 280, 284,
 287, 288, 290
 Stephens, R. M., 346
 Stern, C., 20, 25, 33
 Sternburg, J., 305, 307, 310

AUTHOR INDEX

447

- Steudel, W., 367, 380
 Stewart, M. A., 406
 Stokes, B., 93
 Stoll, N. R., 288
 Stone, M. W., 363, 364, 371
 Stone, W. S., 82, 83, 93
 Storrs, E. E., 332, 334, 335, 336
 Stowe, B. B., 380
 Stoy, R. H., 240
 Strickland, W. B., 324
 Stride, G. O., 220
 Strong, F. E., 369, 372, 373
 Stroyan, H. L. G., 139-60
 Stumper, R., 48
 Sturm, H., 209
 Subbarow, Y., 26
 Sudd, J. H., 211
 Sullivan, C. R., 187
 Sullivan, W. N., 324, 328, 331
 Sulzdalskaya, M. V., 281
 Sumerford, W. T., 326
 Summerland, S. A., 346, 347, 348
 Summers, W. A., 405
 Sun, J. Y. T., 321, 333, 334
 Sun, Y. P., 319, 321, 333, 334
 Suomalainen, E., 87
 Sussman, A. S., 286, 287, 292
 Suzuki, T., 326
 Swart-Füchtbauer, H., 292
 Sweet, W. C., 426
 Sweetman, H. L., 184, 185, 195, 197, 252, 259, 260, 269, 270, 271
 Swellengrebel, N. H., 409
 Swenson, K. G., 366, 367
 Swezey, O. H., 102, 108, 111, 254, 255, 258, 260, 261
 Swift, J. E., 327, 378
 Swirski, E., 139, 142, 145, 147, 151, 156
 Sy, M., 348
 Syverton, J. T., 34
 Szirmai, J., 284, 286, 287, 292
- T
- Taira, T., 68
 Takakusa, S., 18
 Takeda, K., 19
 Takei, S., 337
 Talbot, M., 185
 Taliaferro, W. H., 403
 Talibili, S. A., 423, 428
 Tam, N.-D., 45
 Tambs-Lyche, H., 146
 Tamura, S., 23, 33
 Tanada, Y., 277-302; 279,
- 280, 283, 285, 286, 287, 288, 289, 292, 294
 Tanner, C. C., 371
 Tarr, S. A. J., 378
 Tartrer, A., 68
 Tashiro, H., 279, 290, 291
 Tattersfield, F., 321
 Tauber, O. E., 3, 7
 Taylor, A., 19, 33
 Taylor, G. G., 346, 349
 Taylor, H. S., 110
 Taylor, L. R., 148, 149
 Tehon, L. R., 189, 191
 Tellford, H. S., 368, 371, 372
 Teotia, T. P. S., 324
 Terriere, L. C., 304, 332
 Teterovskaya, T. O., 185
 Tew, R. P., 352, 354
 Théodoriès, J., 292
 Thistle, A., 268, 269, 270, 272
 Thomas, C. A., 371
 Thomas, F. J. D., 371
 Thompson, C. G., 278, 279, 281, 285, 289, 290, 293, 294, 295
 Thompson, J. A., 394
 Thompson, J. L. C., see Cloudsley-Thompson, J. L.
 Thompson, W. L., 281
 Thompson, W. R., 235, 236, 251, 260
 Thomson, M., 192
 Thomson, D. L., 65
 Thomson, H. M., 283, 284, 286
 Thomson, R. C. M., see Muirhead-Thomson, R. C.
 Thomson, R. H., 62
 Thorntwaite, C. W., 186, 189
 Thorpe, W. H., 80, 81, 83, 106, 167, 179
 Tiêu, N. -C., see Nguyễn-Cong-Tiêu
 Tiflow, W., 405, 408, 409
 Tiggeleven, L. M. J., 111, 113
 Tighe, J. F., 331, 338
 Tillyard, R. J., 118, 122, 124, 125, 252, 254, 269
 Timon-David, J., 59
 Tinbergen, N., 207, 209, 212, 219, 224
 Tippmann, F. F., 118, 121, 123, 128
 Tipton, S. R., 32
 Tischer, J., 60
 Tisdale, E. W., 259, 266
 Tixer, R., 69
 Tobias, J. M., 25, 306, 307, 310, 311
 Todd, A. R., 62, 63, 64
 Tolley, H. R., 183
- Tomizawa, C., 304, 315
 Toole, E. H., 364
 Törnblom, O., 220
 Toumanoff, C., 7, 280, 283, 285, 286, 287, 289, 290, 293
 Townes, M., 128
 Townsend, G. F., 52, 344
 Toyama, T., 326
 Tracey, K. M., 26
 Trägårdh, I., 120
 Trager, W., 19, 21, 23, 25, 26, 27, 28, 32, 34
 Traub, A., 304
 Traub, R., 392
 Travis, B. V., 325, 326
 Trebouse, J., 330, 338
 Treherne, J. E., 143
 Trewartha, G. T., 189
 Trofimov, G. K., 423, 424, 429
 Tsao, C. H., 324, 328
 Tschesche, R., 66
 Tseng, P., 424, 426
 Tsuneki, K., 213, 216, 228
 Tuppy, H., 69
 Turner, N., 324, 373
 Turzan, C. L., 344
 Tusa, C., 381
 Twarog, B. M., 311, 312
- U
- ud-Din, M. Q., see Qutub-ud-Din, M.
 Ullyett, G. C., 168, 236, 237, 240, 290
 Underhill, J. C., 322
 Unger, K., 150
 Urefa Hernandez, L., 422, 426
 Uriarte, L., 392
 Usinger, R. L., 77, 84, 88, 95
 Utida, S., 235, 243
 Uvarov, B. P., 99, 183, 184, 190, 194, 195
- V
- Vago, C., 27, 29, 30, 31, 278, 279, 280, 284, 287, 289, 290, 291, 292
 Valcarce, A. C., 378, 379, 380
 Valentine, I. M., 44
 van Asperen, K., see Asperen, K. van
 VanBaalen, C., 52
 Van der Goot, P., 263
 Van der Kloot, W. G., 215
 van de Vrie, M., see Vrie, M. van de
 Van Dinther, J. B. M., 373
 van Emden, F. I., see Em-

AUTHOR INDEX

- den, F. I. van
van Esch, I., see Esch, I.
van Hoof, H. A., see Hoof, H. A. van
Van Iersel, J. J. A., 224
Vánková, J., 289
Van Soest, W., 140
Vanwetswinkel, G., 350
Varela, G., 399
Vargas, L., 422, 424, 427
Varley, G. C., 166, 235,
241, 245
Varroisneau, W. W., 209,
219
Vasiljević, L. A., 280, 286
Vassière, P., 110
Veber, J., 282, 289, 294
Venegas, J. A. C. y, see
Concha y Venegas, J. A.
Venkataraman, K., 62
Venkat Rao, V., 422, 423,
424, 426, 427
Villiers, A., 101, 110, 112
Viscontini, M., 52, 66, 67
Vivino, A. E., 52
Vleugel, D. A., 208
Vogel, G., 223
von Butovitsch, H., see
Butovitsch, H. von
von Frisch, K., see Frisch,
K. von
von Hörmann-Heck, S., 209,
228
von Linden, M., see Linden,
M. von
Voogd, S., 47, 48
Voué, A. D., 235, 236
Vowles, D. M., 210, 211
Vrie, M. van de, 352
Vuillaume, M., 210
- W
- Waddington, C. H., 1, 14
Wagenknecht, A. C., 313
Wagner, J., 392
Wagner, R. P., 32
Wain, R. L., 381
Waite, H., 416
Walker, R. L., 379
Wallace, G. E., 187
Waller, E. F., 398
Walkley, L. M., 128
Wallis, R. C., 284, 292,
295
Walsh, B. D., 79, 106
Walther, G. E., 372
Wangersky, P. J., 235, 246
Ward, C. Y., 367
Ward, J., 325, 328
Wardle, R. A., 162, 406
Wason, E. J., 346
Wasserburger, H. J., 338
Watanabe, S., 245
Waterhouse, D. F., 10, 143,
144
- Waterston, J. M., 110
Watkins, J. C., 63, 64
Watson, E. A., 404
Watson, M. A., 142
Wattal, B. L., 422, 423,
427
Wave, H. E., 281
Way, M. J., 144, 145
Waymouth, C., 26, 27, 32
Weatherley, A., 312, 313,
314
Weatherley, P. E., 141
Weaver, J. E., 201
Weaver, N., 51, 208, 224
Weber, P. W., 112, 272
Webley, D. P., 3, 374
Webster, F. M., 117
Wedemeyer, J., 185
Weeks, W. F., 367
Weiant, E. A., 305, 306
Weidmann, U., 226
Weih, A. S., 209, 221, 223
Weiser, J., 278, 282, 283,
284, 285, 288, 289,
291, 292, 293, 294
Weis-Fogh, T., 218
Weitz, B., 418
Welch, H. E., 278
Wellington, W. G., 148,
183, 184, 186, 187,
188
Welsh, J. H., 306
Wenyon, C. M., 404
Wermel, E. M., 19
Wertheim, G., 151
Wertman, K., 400
West, A. S. Jr., 193
West, L. S., 415, 417, 418,
419, 422
Westlake, W. E., 328
Weyer, F., 34
Whalen, M. M., 286
Wharton, D. R. A., 44, 45
Wharton, M. L., 44, 45
Wheeler, C. M., 407
Whitaker, W. D., 378
Whitcomb, W. D., 351
White, M. J. D., 83, 87,
89, 93, 173, 174, 175
White, P. R., 17, 33
White, R. S., see Senior-
White, R.
White, R. T., 277, 279,
290, 291
Whiting, P. W., 172, 173,
174, 175
Whittaker, V. P., 312
Wiedbrauck, J., 215, 216
Wiedner, H., 116
Wieland, H., 68
Wiesmann, R., 346
Wigglesworth, V. B., 1-16;
1, 2, 3, 4, 5, 6, 7, 8,
10, 11, 12, 13, 14, 69,
73, 144, 146, 303
Wikén, T., 279, 287, 294
Wilbur, D. A., 111
- Wilcoxon, F., 330, 331
Wildbolz, T., 279, 294,
349
Wilkes, A., 185, 239
Willard, A., 424, 428
Wille, H., 279, 287, 294
Williams, C. B., 184
Williams, C. M., 20, 21,
22, 23, 27, 30, 32, 33,
215
Williams, D., 111
Williams, F. X., 271
Williams, J. R., 251, 253,
254, 256, 258, 267, 268
Williams-Ashman, H. G.,
303
Williamson, M. H., 235
Willis, E. R., 44
Willmer, E. N., 17
Wills, J. H., 313
Wilson, C. E., 325
Wilson, E. O., 85, 86
Wilson, F., 251, 253, 255,
256, 257, 258, 259,
260, 261, 262, 263,
265, 266, 268, 269,
271, 272
Wilson, H. G., 326
Wilson, I. B., 312, 313
Wilson, K. M., 338
Wilson, L., 219
Wingo, C. W., 325
Winteringham, F. P. W., 303-
18; 303, 304, 306, 311,
312, 313, 314, 315, 316
Winton, M., 379
Witherspoon, J. P., 186
Witman, E. D., 345
Witt, A. A., 242
Witt, J. M., 330, 331
Witt, P. N., 214
Wittekindt, W., 226
Wolcott, G. N., 111, 291
Wolf, J. P., III, 379
Wood, F. D., 404
Wood, H. C. S., 68
Woodruff, N., 324
Woods, A., 374
Woods, R. W., 428
Woodward, R. C., 371
Woodward, T. E., 402
Woodworth, C. E., 371
Workman, W. G., 400
Wright, D. W., 378
Wright, F. N., 426
Wright, J. M., 368
Wright, W. H., 405
Wu, Lien-Teh, 409
Wu, Y. T., 424, 426
Wyatt, G. R., 24, 26
Wyatt, S. S., 3, 21, 22, 24, 25,
26, 27, 28, 29, 30, 31, 32
Wylie, W. D., 329
- Y
- Yamaguchi, K., 23, 33

AUTHOR INDEX

449

Yamaki, T., 380
Yamasaki, S., 404
Yamasaki, T., 305, 309
Yeager, J. F., 4, 11, 12
Yeomans, A. H., 328
Yersin, A., 394
Young, H. C., Jr., 350
Yushima, T., 311, 313
y Venegas, J. A. C.,
see Concha y Venegas, J. A.

Z

Zachau, H. G., 41
Zaher, S. H., 315
Zappetini, G., 259
Zeller, H., 12
Zentmyer, G. A., 381
Ziady, S. E., see El Ziady, S.
Ziegler-Günder, J., 65, 67, 68
Zimnick, H. L., 282, 283,
286

Zimmerman, E. C., 108
Zinsser, H., 400, 401
Zippelius, H. M., 209
Zitter, E. M., 32
Zoch, E., 52
Zoebelein, G., 178
Zulueta, J. de, 423, 426,
428

Zurakowski, W., 367

Zweig, G., 95

Zweigelt, F., 142, 154

SUBJECT INDEX

- A**
- Acaena sanguisorbae*, 259, 270-71
 - Acaenitini*, 128
 - Acanthocinus*, 105, 115, 119
 - Acanthocinus aedilis*, 129
 - Acanthocinus nodosus*, 130
 - Acanthoderini*, 122
 - Acanthomigdolus*, 127
 - Acanthophorus*, 121
 - Acanthoscelides obtectus*, 329
 - Acanthosciades*, 122
 - Acanthospermum hispidum*, 272
 - Acaricides*, 354-55
 - Aceria tulipae* (wheat curl mite), 366, 380
 - Acetylcholine*, 311-12
 - ACH**
nerve metabolism in, 306, 307, 310
in *Periplaneta americana*, 311
 - Actaea*, 89, 227
 - Acmaeops*, 127
 - Acmonera conjux*, 128
 - Acomya witherbyi*, 391
 - Acotyledon agilis*, 242
 - Acridiidae*, 143
 - Acrocincus longimanus*, 121
 - Acrostalagmus aphidium*, 281
 - Actinociphalus parvus*, 409
 - Acyrthosiphon pisum*, 141, 143
 - Acyrthosiphon spartii*, 144, 151
 - Adaptation, 121-27
 - Adelges piceae*, 144
 - Adelges strobi*, 62, 63
 - Adelgidae*, 142
heteroecy, 154, 155
sex forms in, 146
 - Adelina tribolii*, 248
 - Adipocytes*, 1
 - Adisura atkinsoni*, 280, 285
 - Adoxophytes orana*, 349
 - Aedes*, 420
 - Aedes aegypti*
bioassay of insecticides, 331-33
as carrier of yellow fever, 391
 - DDT effect on, 304
effect of insecticides on, 304, 325, 327, 334
haemocytes of, 2
photomigration assay method of, 334-37
 - tissue culture of, 24, 28
vitamin deficiency, 53
 - Aeolesthis holosericea*, 108
 - Aerenicopsis championi*, 112, 261
 - Aeschna*, 10
 - African migratory locust,
see *Locusta migratoria*
migratoria
 - Agapanthia*, 127
 - Agapanthia dahli*, 111
 - Agapanthia villosovirides*-cens, 117
 - Agapanthida*, 122
 - Agathis festiva*, 329
 - Agonoderus comma*, 378
 - Agonoderus lecontei* (seed-corn beetle), 378
 - Agrius anxius*, 78
 - Agrius hyperici*, 265
 - Agriotes*, 371
 - Agriotes mancus*, 372
 - Agriotes obscurus*, 281
 - Agriotes sputator*, 281
 - Agrippina bona*, 409
 - Agromyzta lantanae*, 261, 262
 - Agrotis orthogonia*, 198
 - Agrotis ypsilon*, 379
 - Alaus*, 128
 - Aldrin*
control by
of carrot rust fly, 374
of European apple sawfly, 352
of flea beetles, 378
of fruit fly, 374
of onion maggot, 374
of plum curculio, 351
of wireworms, 369-72
 - fish sensitivity to, 337-38
measurement of potency, 322
measurement of action, 307-8
neurophysiological disturbances, 308-9
plant residual toxicity testing for, 331, 332, 333, 334
seed treatment, 366, 378
tests for residue of, 324
 - T₅₀ test and, 336
 - Aleyrodidae*, 140
 - Alfalfa* caterpillar, see *Colias philodice*
eurytheme
 - Alfalfa snout beetle*, see *Brachyrhinus ligustici*
 - Alfalfa weevil*, see *Hypera postica*
 - Algae*, 282-83
 - Allethrin*, 322, 325, 336
 - Almond moth, see *Ephestia cautella*
 - Alnus*, 92
 - Alysia manducator*, 167
 - Amblonyx corpha*, 89
 - American cockroach, see *Periplaneta americana*
 - Ametastegia glabrata*, 353
 - Amino acids, 26-27
 - Ammophila*, 212
 - Ammophila campestris*
classification of, 227
feeding habits, 94
fighting among, 208
nest building, 213
 - Amoebocyte, 10, 11
 - Amphimallon majalis*, 279, 291
 - Amphipsylla rossica*, 398
 - Anacolini*, 122
 - Anacolus*, 125
 - Anagasta kuhniella*
(Mediterranean flour moth)
 - haemocyte count, 4
parasite-host relation, 238, 243
 - pigments of, 66, 67, 72
 - Sporeine* in control of, 280
 - Anarsia spartiella*, 259
 - Anasa tristis*, 69
 - Anastrepha ludens* (Mexican fruit fly), 200
 - Anaxiphia*, 89
 - Anchastus cinereipennis*, 368
 - Aneflomorpha*, 102, 112
 - Anelaphus nanus*, 128
 - Aneristus*, 169
 - Angitia*, 168
 - Anopheles*
death rate, 418
dispersal by transportation, 420
host for malaria, 417
and malarial parasites, 389
reproduction rate, 418
taxonomy of, 93
vector density, 418
as vectors of malaria species list, 420-31
 - Anopheles albimanus*, 326
 - Anopheles culicifacies*, 419
 - Anopheles fluviatilis*, 417
 - Anopheles gambiae*, 326, 419
 - Anopheles litoralis*, 417
 - Anopheles maculipennis*

- atroparvus*, 219, 224
Anopheles minimus
 flavirostris, 417
Anopheles quadrimaculatus
 and dog heart worms, 405
 haemocytes of, 2
 insecticide residual
 toxicity, 325, 326
 means of testing insecticidal residues, 333
Anopheles subpictus
 indefinitus, 420
Anopheles vagus, 326
Anoplus, 227
Anoplodera, 112
Anoplodera instabilis, 103
Anoplodera nitens, 110
Anoplodermini, 122, 127
Anoplophora macularia, 110
Anoplura, 390
Anthraea polyphemus, 30
Anthocyanins, 65
Antholcus varinervis, 259,
 271
Anthomonus grandis (boll
 weevil), 379
Anthomonus pomorum
 (apple blossom weevil),
 351
Anthoxanthins, 65
Antibiotics, 31, 292-93
Ants
 and aphids, 155-56
 communication in, 210-11
 cyclic changes in behavior,
 215-16
 fat body of, 1
 mimicry of, 124, 126
 queen substance of, 48-49
 see also specific names
Anurphis roseus, 353
Aonidiella, 94
Aonidiella aurantii
 (California red scale),
 167, 170, 238
Apanteles glomeratus, 164,
 294
Apanteles medicaginis, 167
Apanteles solitarius, 166
Apatothisis, 126
Aphelenchoides besseyi, 380
Aphelinidae, 169
Aphid
 aphins of, 62-64
 biology of, 139-60
 control
 by systemic materials,
 379
 damage to weeds, 260
 evolution of host relations
 climatic factors, 156-57
 degree of adaptation,
 154-55
 dispersal hazards, 155
 growth patterns, 155
 myrmecophily, 155-56
 nonparasitic phases
 forms, 146-48
 functions, 144-48
 host finding, 150-52
 host selection, 150-52
 migration, 148-50
 parasitic life
 degeneration, 140
 feeding, 140-43
 field populations, 144-46
 nutrition, 143-44
 parthenogenesis in, 87
Aphididae
 host relationship, 155
 pigments of, 62-64, 65
Aphidoidea, 139
Aphis craccivora, 148
Aphis fabae, 63
 feeding of, 140, 142
 form determination, 147
 host range, 153
 host selection, 151, 152
 migration of, 148, 149,
 150
 number of progeny, 140
 nutrition of, 143
 population control, 144,
 145
Aphis farinosa, 146
Aphis gossypii (cotton
 aphid), 77-98, 379
Aphis pomi, 353
Aphrini, 62-64
Aphytis chrysomphali, 167
Aphytis lingnanensis, 167,
 238
Aphytis maculicornis, 166
Aphytis mytilispidis, 237-
 38
Apion antiquum, 270
Apion neofalax, 270
Apion ulicis, 269
Apis florea, 225
Apis mellifera (honey bee)
 communication in, 210-11
 dancing of, 225-26
 DDT susceptibility, 327
 flower feature attractions,
 221
 haemocytes
 count, 5
 nutritive function, 11
 types of, 2
 insecticide residue testing
 on, 323
 marking scents, 45-46
 mating of, 175-76
 queen substance of, 47-48
 royal jelly
 chemistry of, 52-53
 determining factor, 51-
 53
 mechanism of action, 53
 somatic diploidy, 173
Apoderus coryli, 207
Apomecyna, 111
Apomecyna binubila, 120
Apomycini, 124
Aporia crataegi, 294
Aptenopedes sphenariooides,
 89
Apterocaulus, 126
Aradus cinnamomeus, 281,
 290
Aramite, 328
Archips argyrospila, 353
Archips fumiferana, 95
Archips rosana, 164, 353
Argynnis, 222
Argynnis paphia, 43, 220
Argyrotania velutinana
 (red-banded leaf
 roller), 279, 347, 349
Arhopalus, 112, 119
Arilus cristatus, 128
Aromia moschata, 116
Arrhenotoky, 172
Arsenicals, 371
Arthrochlamys, see
Chlamisus
Arvicathis testicularis, 391
Ascogaster, 162
Aseminae
 cryptic coloration, 122
 distribution, 100, 102
 host specificity, 105
 mating, 117
 oviposition of, 119
 sound production, 118
 symbiotes of, 103
Asilidae, 128
Ash-gray blister beetle, see
Epicauta fabricii
Aspergillus flavus, 286
Aspergillus ripens, 281
Aspidaphium, 142
Aspidiotus forbesi, 353
Aspidiotus perniciosus
 (San Jose scale), 193,
 353
Ataxia hubbardi, 111
Ataxia sulcata, 111
Athesapeuta cyperi, 271-72
Atimia, 100
 emergence of, 112
 host specificity, 106, 107
Atimia dorsalis, 112, 120
Atomaria linearis (pygmy
 mangold beetle), 378
Atriplex confertifolia, 260
Attacus, 68
Attagenus piceus, 323
Atta sexdens rubripes,
 46
Atelabus nitens, 207
Auchenorrhyncha, 140
Aulacocnutes pachyneziodes,
 120, 122
Australian locust, see
Chortoicetes terminifera
Austrocoetes cruciata, 196
Austrocoetes pusilla, 89
Austrotortrix postvittana,
 347, 349
Automeris aurantiaca, 216

SUBJECT INDEX

- B
- Bacillus cereus*, 279, 286
degrees of virulence, 287
persistence of, 290
viability of, 288
- Bacillus cereus* var. *alesti*,
279
- Bacillus popilliae*, 279, 291
- Bacillus sottii*, 279, 286, 293
- Bacillus thuringiensis*, 279,
283
- degrees of virulence, 287
effect of antibiotics on,
293
- effect on *Polistes exclamans*, 294
- host susceptibility, 286
- persistence of, 290
- spread of, 285
- viability of, 288
- Bacteria*, 279-80
- Bactra truculenta*, 271-72
- Bairamia fusicipes*, 408
- Barathra brassicae* (cabbage armyworm), 322
- Barytinus leguminicola*,
111
- Batocera lineolata*, 129
- Batocera rufomaculata*, 113
- Batocera wallacei*, 121
- Bayer 25141, 373
- Bayer 25198, 376
- Beauveria*, 281
degrees of virulence, 287
viability of, 288
- Beauveria bassiana*
Cerambycidae susceptibility,
129
Lepidoptera resistant to,
286
microbial control, 281, 283
optimum germination, 291
- Beauveria tenella*, 281
- Bed bug, see *Cimex lectularius*
- Bee
flower feature attractions,
221
intruders, 209
mimicry of, 125, 126
see also specific names
- Beet leafhopper, see *Circulifer tenellus*
- Behavior of insects, see
Ethological studies of
insect behavior
- Belostoma indica*, see
Lethocerus indicus
- Bembix*, 224
- Bembix brullei*, 228
- Bembix nipponica*, 213, 216
- BHC (benzene hexachloride),
371
control by
of European apple
sawfly, 352
- of flea beetles, 378
- seed-corn maggot, 373
- seed treatment, 378
- of wireworms, 371, 372
- of woolly apple aphid, 350
- malaria eradication, 421
- plant residual toxicity
testing for, 332
- residual toxicity of, 323,
326, 327, 330
- residue testing for, 323
- soil residual toxicity of,
329
- γ-BHC
control by
of carrot rust fly, 374
of flea beetles, 374, 378
of frit fly, 374
- lethal action of, 310
- measurement of potency,
322
- residue testing methods for,
321
- seed treatment, 378
- wireworm control, 371,
372
- Bidi-bidi*, 270-71
- Bildungsgerde, see
Haemopoietic organs
- Bile pigments, 68-69
- Bioclimatics, 183-206
analysis, 188-90
biological aspects of, 184-88
climatic indicators, 188-89
climatic observation, 188
correlations, 190-97
definition of, 183
humidity, 185-86
light intensity, 187
rain and winter cold, 186
snow, 186
temperature, 184-86
thermal constant and
distribution, 191-92
use in forecasting distribution,
197-201
- Biological control
of cacti, 112
host-parasite populations,
243-45
- parasitic Hymenoptera,
161-80
- of weeds with insects,
251-76
current efforts, 272-73
examples of, 260-72
- host specificity, 254-55
principles and concepts,
253-54
probability of success,
257-60
risks of introduction,
254-55
starvation tests, 255-56
unfounded criticisms of,
256-57
- Black sage, see *Cordia*
- macrostachya
- Blapstinus*, 379
- Blatta orientalis*, 7
- Blattella germanica*, 2, 44,
313
- Blepharomastix
acutangulalis, 261, 262
- Blissus leucopterus*
(chinch bug), 327
- Blood cell, 1-16
organs forming, 2-3
see also Haemocyte
- Blowfly, 26
- Bombus hortorum*, 46
- Bombyx mori* (silkworm)
epidermis survival, 24
food ingestion rate, 141
haemocyte count, 3
hormone influence on
behavior, 216
- microsporidia in, 283
- and *Nosema bombycis*, 34
- pebrine of, 282
- pheromones of, 39
- pigments in
anthoxanthins, 65
carotenoid, 60, 61
cytochrome-C, 69
omochromes, 72-73
pterins, 66, 67, 68
- response to female scent,
217
- sex attractant of, 40, 42
- survival in Wyatt's
medium, 25
- tissue culture, 19, 20, 22,
23
- amino acids, 26
energy source of, 26
hanging drop in, 30
- hormones in, 28
- media for, 29
- nucleic acids in, 27
- tissue extracts, 28
- Borrelia recurrentis*, 389
- Brachycaudus helichrysi*,
146
- Brachycera*, 226
- Brachyrhinus ligustici*, 283,
293
- Brachyrhinus oribricollis*,
351
- Brachysomida*, 112
- Brachysomida tumida*, 103
- Bracon*, 175, 176
- Bracon greeni lefroyi*, 238
- Bracon hebetor*
distribution of progeny,
240
- genetics of, 173
- host-parasite range, 238
- venom of, 180
- Braconidae*, 127
- Bradyneuma strasseni*, 128
- Brevicoryne brassicae*,
141, 148, 150
- Brill's disease, 399, 400

- Bronze birch borer, see *Agrilus anxius*
Bryobia arborea, 346, 354
Bucculatrix thurberiella, 379
Buprestidae, 123
Byturus bakeri, 78
Byturus rubi, 78
- C**
- Cabbage armyworm*, see *Barathra brassicae*
Cabbage looper, see *Trichoplusia ni*
Cabbage seed-stalk curculio, see *Ceutorhynchus quadridentis*
Cabbage webworm, see *Hellula undalis*
Cactoblastis cactorum, 253, 263-65
Cactoblastis doddi, 264
Cactophagus spinolae, 264
Calamobius filum, 111
California oakworm, see *Phryganidea californica*
California red scale, see *Aonidiella aurantii*
Caliptamus, 227
Callaphididae
 host bond, 155
 host colonization, 153
 migration in, 148
 sex forms in, 146
Callichromini, 110, 116, 123
Calidiellum, 106
Calidiini, 102, 105, 117
Callidium, 105-7
Calligrapha, 92
Callimoxys, 100
Calliphora, 53
 blood coagulation, 9, 10
 haemocyte count, 5, 6
 haemopoietic organ of, 3
 metamorphosis in, 6
 tissue culture, 18
 media for, 29
Calliphora erythrocephala, 70, 304, 312
Callisto geminatella, 349, 353
Callitroga hominivorax, 78, 334
Callitroga macellaria, 334
Callosamia promethea (promethea moth), 21, 30
Callosobruchus chinensis, 243, 245
Callosobruchus maculatus, 243
Calomel seed treatment, 373, 374
Calopteryx, 208, 217, 223
Calopteryx splendens, 209, 221
Capitophorus, 153
Carassius auratus, 337
Carasius, 12
Carasius morosus
 haemocyte role, 8, 9
 pigments of, 60, 68
Carasius septempunctata, 60
Carolinella aenescens, 110
Carotenoids, 60-61
Carpocapsa pomonella (codling moth)
 control of
 by bacteria, 280
 by DDT, 346, 347, 348
 by Diazinon, 348
 by Dilan, 347
 by EPN, 348
 by methoxychlor, 347
 by parathion, 347, 348
 delayed emergence, 345
 derivation of name, 344
 diapause induction, 344
 lead arsenate as stomach poison for, 345
 mite populations increase in, 346
 persistence of *Bacillus cereus* in, 290
 temperature requirements, 201
Carulaspis visci, 260
Casca, 169
Catabena esula, 261, 262
Cecropia moth, see *Hyalophora cecropia*
Cediopsylla, 403
Cediopsylla simplex, 398
Centaurea, 272
Centaurea solstitialis, 254
Cephalonomia waterstoni, 224
Cephalosporium, 281
Cephus cinctus (wheat sawfly), 199
Cephus pygmaeus, 167
Cerambycidae
 adaptations for subterranean existence, 126
 Batesian mimicry, 124-25
 body size, 121
 distribution of genera, 100
 ecology of, 99-138
 economic importance, 108-12
 field crops, 110-11
 flowers, 111-12
 forest products, 109
 forests, 108-9
 fruit trees, 110
 nut trees, 110
 seed-infesting, 111
 shade trees, 109-10
 vegetables, 110-11
 effect of humidity, 130
 ethological adaptation, 112-20
 feeding habits classified, 115-16
 form, 121
 geographical ranges of, 101, 102
 hibernation of, 120
 host specificity, 105-8, 117, 118
 larval food habits, 102-3
 mating, 116-17
 Mullerian mimicry, 125-26
 natural mortality, 127-30
 olfactory sense, 118
 oviposition of, 119-20
 physiological adaptation, 112-20
 sexual dimorphism, 121-22
 sound production, 118-19
 structural adaptations, 121-27
 symbiosis, 103-5
 temperature and, 129
 wood digestion, 103-5
Cerambycinae
 Batesian mimicry, 125
 bright coloration, 123
 cryptic coloration, 122
 distribution of, 100, 102
 feeding habits, 115
 host specificity, 105
 longevity of, 113-14
 mating, 117
 oviposition of, 119
 sexual pubescence, 122
 sound production, 118
 symbiotes of, 103
Cerambyx, 104
Cerambyx cerdo, 121, 129
Ceratitis capitata
 climatic influences on distribution, 191
 comparison of climates for, 198
 forecasting of distribution, 199
 limiting climatic conditions, 187
Opium tryoni as control for, 252
Ceratophyllum acutus, see *Diamanus montanus*
Ceratophyllum columbae, 408
Ceratophyllum gallinae, 408
Ceratophyllum hirudinis, 404
Ceresium sinicum, 129
Cerotenes, 122
Cestode infestations, 405-6
Ceuthorhynchus quadridentis (cabbage seed-stalk curculio), 378

SUBJECT INDEX

- Chaetocnema, 374, 378
 Chaetonodexodes marshalli, 259
 Chagas's disease, 404
 Chaitophoridae, 155
 Chaitophorinella, see Periphyllus
 Chalcididae, 177
 Charissa, 127
 Chauliognathus, 125
 Chelinidae tabulata, 263, 265
 Chelinidae vittiger, 259, 233, 265
 Chelonus, 162
 Chelonus annulipes, 165
 Chelonus texanus, 169, 240
 Chelosterna scabrior, 129
 Chestnut blight, 110
 Cheyletus eruditis, 242
 Chinch bug, see Blissus leucopterus
 Chionaspis furfuri, 353
 Chironomus, 2, 93
 Chironomus plumosus, 3
 Chlamisus, 81, 92
 Chlamys, see Chlamisus
 Chlordane
 control by
 of European apple sawfly, 352
 of plum curculio, 351
 of seed-corn maggot, 373
 fish sensitivity to, 337-38
 residue testing methods
 for, 322, 323, 324, 326, 327, 329, 332
 seed treatment, 378
 T₅₀ test and, 336
 α-Chlordane, 307
 Chloridolum, 117
 Chlorinated camphene, 326
 Choristoneura fumiferana
 (spruce budworm)
 host mortality, 236
 microsporidia
 egg transmission, 283, 284
 infections, 286, 287
 taxonomy of, 79
 Choristoneura pinus, 78
 Chorthippus, 223
 Chorthippus biguttulus, 209, 221
 Chorthippus brunneus, 209, 221
 Chortoicetes terminifera
 (Australian locust), 196
 Chrysobothris, 130
 Chrysolina gemellata, see Chrysolina quadrigemina
 Chrysolina hyperici, 266, 267
 Chrysolina quadrigemina, 258, 265-67
 Chrysolina varians, 266
 Chrysomela, 82, 93
 Chrysomela hyperici, see Chrysolina hyperici
 Chrysomela interrupta, 90
 Chrysomela quadrigemina,
 see Chrysolina quadrigemina
 Chrysomelidae, 14, 90
 Cimex, 7
 Cimex lectularius (bed bug), 322, 323
 Clonus oleus, 65
 Circulifer tenellus (beet leafhopper), 379
 Citellus, 402
 Citellus beecheyi, 397
 Citriphaga mixta, 110
 Classification, 118, 119, 139
 see also Taxonomy
 Clidemis hirta, 259, 267
 Climate
 analysis of, 189-90
 classification, 189
 climatographs, 190
 cold as limiting distribution, 192-94
 distribution, 189
 distribution of Cerambycidae, 99, 100, 101
 effect on aphids, 156-57
 heat as limiting distribution, 194-95
 indicators, 188-89
 moisture as limiting distribution, 195-97
 observations, 188
 see also Bioclimatics
 Clivina impressifrons, 378
 Closterus, 121
 Clyanthus herbsti, 117
 Clytini, 117, 123, 124
 Clytoleptus, 100
 Coagulation, blood, 9-10
 Coccidia, 61, 282
 Coccinella septempunctata, 60, 196
 Coccinellidae, 60
 Coccoidea, 140
 Coccophagus, 169
 Cockroach, 23, 26
 see also specific names
 Cocoon construction, 215
 Codling moth, see Carpocapsa pomonella
 Coenonympha, 95
 Coleomeithia evaniiformis, 125
 Coleoptera
 bacterial control of, 280
 carotenoids of, 60
 Cerambycidae
 ecology of, 99-138
 haemocyte count, 5
 Müllerian mimicry in, 125-26
 sex attractants, 43-44
 taxonomy, 90-93
 turning behavior, 227
 Colias, 78
 Colias boothii, 82
 Colias eurytheme, 82, 167
 Colias hecla, 82
 Colias lesbia, 280
 Colias nastes, 82
 Colias philodice, 82
 Colias philodice eurytheme
 bacterial control, 280
 biological and microbial control, 293, 294
 virus control, 279, 290
 Collembola, 209
 Collyria calcitrator, 167
 Colorado potato beetle,
 see Leptinotarsa decemlineata
 Coloration
 behavior studies and, 208
 bright, 123-24
 contrasting, 123-24
 cryptic, 122-23
 and generalized escape behavior, 228
 mimicry
 Batesian, 124-25
 Müllerian, 125-26
 preference, 150, 220
 see also Pigments
 Comperiella bifasciata, 94, 171
 Compositae, 123
 Compsozoma mutillarium, 125
 Conoderus, 372
 Conotrachelus nenuphar
 (plum curculio), 345, 350-51
 Copidosoma, 179
 Copidosoma koehleri, 177
 Copulation, 209
 Cordia macrostachya, 256, 259, 267-68
 Corethra, 19, 20
 Corixa punctata, 2
 Corn earworm (see Heliothis zea)
 Cortodera, 100, 112
 Cortodera berkeleyensis, 103
 Corylobium, 153
 Corythalia, 227
 Corythalia xanthopa, 222
 Costelytra zealandica, 285
 Cotton aphid, see Aphis gossypii
 Courtship
 behavior patterns in, 209
 song, 214
 types of in grasshoppers, 227
 see also Mating
 Crabro cribrarius, 44
 Crambus bonifatellus, 282

- Cremastobombycia lantanae-*, 261
Crithidia cleopatrae, 409
Crithidia ctenophthalmi, 409
Crithidia fasciculata, 53
Crocidosemia lantanae, see
Epinotia lantana
Crofton weed, 268
Crossidius, 103, 112, 123
Crustacea, 337-39
Cryptolaemus montrouzieri, 252, 264, 265
Cryptomyzus, 153
Cryptomyzus ribis, 142, 143, 145
Cryptus inornatus, 163, 164, 240
Ctenicerca aeripennis destructor, 78
Ctenicerca pruinina noxia (Great Basin wireworm), 371, 372
Ctenocephalides canis anemia and, 406
cestode infestations, 405
filariasis transmission, 405
salmonellosis transmission, 399
typhus transmission, 401
Ctenocephalides felis *cestode infestations*, 405
filariasis transmission, 405
myxomatosis transmission, 403
rickettsial infections, 409
typhus transmission, 401
Ctenophthalmus agrytes, 398, 409
Ctenophthalmus assimilis, 398
Ctenophthalmus pollex, 398, 405
Ctenopsylla segnis, 398
Cucujus, 127
Culex, 93, 389, 420
Culex pipiens, 2
Culture of insect tissues, 17-38
Culture flasks types of, 30-31
Cyclic changes in behavior of ants, 215-16
Cyclocephala, 378
Cyclopilum, 89
Cylas formicarius, 201
Cylene robiniae, 129
Cymatoderia, 127
Cynthia, 28
Cyperus rotundus, 271-72
Cyphus myrmosarius, 125
Cyrtinus pygmaeus, 121
Cystospora, 109
Cytisus scoparius, 272
- Cytokinesis**, 20
tissue culture, 20
- D**
- Dactylopius ceylonicus*, see
Dactylopius indicus
Dactylopius coccus, 61
Dactylopius confusus, 259, 263, 265
Dactylopius indicus, 262, 263
Dactylopius newsteadi, see
Dactylopius confusus
Dactylopius opuntiae, see
Dactylopius tomentosus
Dactylopius tomentosus control of prickly pears, 252, 263, 264, 265
Dacus cucurbitae, 187, 199
Dacus dorsalis, 187, 199
Dahlbominus fuscipennis, 168, 239
Danaus chrysippus alcippus, 220
Daphnia, 6
Daphnia magna, 338
Daphnia pulex, 338
Darling beetles, 379
Dasyneura, 93
Dasyneura mali, 353
DDA, 303
DDE, 303, 304
DDT comparison with aldrin, 309
control of
of apple blossom weevil, 351
of apple flea weevil, 351
cooling moth, 346, 347, 348
deciduous fruit insects, 343
of fruit insects, 353
murine typhus, 402
of onion maggot, 373
of plum curculio, 351
of seed-corn maggot, 373
effect on
avian populations, 381
oxidative metabolism, 303-5
fish sensitivity to, 337-38
and increase in *Panonychus ulmi*, 354
lethal action of, 307
malaria eradication, 421, 430, 431
and microbial control, 293
neuromuscular disturbances due to, 305-6
residues of, 319
residue testing methods cage method, 328-29
coated cage method, 326-28
- coated plate method, 324-26
impregnated cloth, 323
impregnated paper, 321-22
for plant, 330-37
soil, 329
T₅₀ test and, 336
- DDVP**, 314
- Deciduous fruit insects** and their control, 343-62
chemical, 355-57
- Degeneration**, 140
- Demeton (Systox)**, 378-80
- Dendrobias**, 115
- Dendrobias mandibularis*, 118
- Dendroctonus**, 90
- Dendroides bicolor*, 130
- Dermacentor variabilis*, 322, 400
- Derobrachus brunneus*, 105
- Derris*, 319
- Desmiphora*, 122
- Desmocerus*, 103
- Deuterotoky*, 172
- DFP**, 312-14
- Diabrotica undecimpunctata howardi* (southern corn rootworm), 378
- Dialges*, 103
- Diamanus montanus*, 398
- Diamond back moth**, see
Plutella maculipennis
- Diapause*, 163-66
- Diastema tigris*, 261, 262
- Diataraxia olereaceae*, 8
- Dianoxenes*, 111, 113
- Diazinon* control by
of seed-corn maggot, 373
of woolly apple aphid, 350
residue of, 325
seed treatment, 367
- Didinium nasutum*, 242
- Dieldrin* control by
of *Brachyrhinus cribicolis*, 351
of European apple saw¹¹, 351, 352
of fruit fly, 374
of onion maggot, 373-74
of seed-corn maggot, 373, 377
of wheat bulb fly, 374
of wireworms, 369-72
- effect on *Periplaneta americana*, 309, 310
- fish sensitivity to, 337
- malaria eradication, 421, 430
- measurement of potency, 322
- mechanism of action, 307
- plant residual toxicity testing for, 332, 334

SUBJECT INDEX

- residual toxicity tests, 324, 327
 seed treatment, 366, 378
- Dihammus cervinus*, 113
- Dilan*
 control by
 of codling moth, 347
 fish sensitivity to, 337-38
- Dipetalonema reconditum*, 405
- Diplazon fissorius*, 7, 8, 165
- Diplazon laetatorius*, 7
- Diplazon pectoratorius*, 166
- Diplococcus pneumoniae*, 409
- Dipodillus watersi*, 391
- Diprion*, 192
- Diprion hercyniae* (European Spruce sawfly)
 biological and microbial control, 293
 temperature preference, 239, 292
 virus infections, 278, 286, 287, 290
- Diptera*
 cleaning behavior, 226
 color preference, 224
 embryonic determination, 23
 haemocyte count, 4, 5
 imaginal discs in, 33
 as predators, 128
 sex attractant, 116
 taxonomy of, 93-94
 tissue formation, 10
- Dipus jaculus*, 391
- Dipyliidium caninum*, 405
- Dipyliidium sexcoronatum*, 406
- Dirofilaria immitis*, 405
- Di-syston*, 373
 control by
 of cotton insects, 379-80
 of onion maggot, 374
 as systemic agent, 379-80
- Dixippus morosus*, see *Carausius morosus*
- Doliops*, 125
- Dorcadion*, 111, 115
- Dorcasta cinerea*, 111
- Dorysthenes*, 127
- Drastrerius dorsalis*, 368
- Drapanosiphum plananoides*, 146, 148
- Drosophila*
 cellular development, 1
 cleaning behavior of, 226
 courtship, 216, 217
 growth factors of, 14
 haemocytes of, 2
 insecticide residue testing
 methods, 324
 melanotic tumor of, 23
 phagocytosis in, 7
 sex determination in, 174
 sexual isolation, 94
- taxonomy of, 81, 93
 tests for insecticide residue, 321
 tissue culture, 20, 25
 media for, 28, 29
 vitamins, 27
 tumors of, 33, 34
- Drosophila aldrichi*, 82
- Drosophila melanogaster*
 γ -BHC residue testing
 with, 322
- DDT residue testing with, 321
 genetic studies on, 69
 haemocyte count, 5
 means of testing insecticidal residues, 333, 334
 pigments of, 66, 68
 soil residual toxicity of
 insecticides for, 329
- Drosophila mulleri*, 82
- Drosophila tripunctata*, 82
- Drosophila viridis*, 229
- Drosophila willistoni*, 4, 5
- Dutch elm disease, 110
- Dysaphis bonomii*, 148
- Dysaphis devecta*, 146
- Dytiscus*, 18
- E
- Earias fabia*, 238
- Eastern field wireworm,
 see *Limonius agonus*
- Eastern raspberry fruit-worm, see *Byturus rubi*
- Eburiodacrys*, 122
- Echidnophora*, 392, 403
- Echidnophaga myrmecobii*, 403
- Echium plantagineum*, 253
- Ecology
 Cerambycidae, 99-138
 and mimics, 125
- Ectohormones, see *Pheromones*
- Elaphidionoides*, 102
- Elateropsis*, 123
- Eleodes*, 378
- Elymus caput-medusae*, 257
- Embryonic determination, 23
- Emex australis*, 270
- Emex spinosa*, 270
- Empoasca maligna*, 353
- Empoasca solana*, 379
- Empusa*, 285
- Enaretta castelnauii*, 111
- Encarsia formosa*
 host-parasite population, 244
- host-parasite relationship, 246
- temperature effect on,
- 168, 239
- Encyclops*, 103
- Encyrtus fuliginosus*, 178
- Endrin*, 307, 369-72
- Endrin*, 307, 369-72
- Enneaphyllus*, 121
- Entomophthora*, 129, 281, 292
- Entomophthora coronata*, 292
- Entomophthora exitialis*, 292
- Entomophthora virulenta*, 291, 293
- Ephestia*
 haemocyte count, 3, 6
 nutritive function of, 12
 as host for parasite, 167
- pigment of, 67
- Ephestia cautella* (almond moth), 193
- Ephestia kuhniella*, see *Anagasta kuhniella*
- Epiblemmum scenicum*, 221
- Epicauta fabricii*, 78
- Epidemiology
 circumstantial, 416
 of malaria, 415-34
 mathematical, 416-20
- Epilachna varivestis* (Mexican bean beetle)
- humidity and hibernation, 185
- limits on distribution, 194, 197
- seed treatment as control, 380
- Epinotia lantana*, 261, 262
- Episomus chlorostigma*, 125
- Epistrophus balteata*, 7, 165
- Epistrophus bifasciatus*, 8, 165
- Epitrix cucumeris* (potato flea beetle), 380
- Epitrix tuberis*, 78
- EPN
 control by
 of apple flea weevil, 351
 of codling moth, 348
 of *Panonychus ulmi*, 355
 of plum curculio, 351
- plant residual toxicity, 332, 333
- residual toxicity tests for, 328
- Erbkoordination, 212
- Ergates*, 100, 128
- Ergates spil culatus*, 121
- Eriococcus orariensis*, 259, 268
- Eriosoma lanigerum* (woolly apple aphid)
- apple rootstocks resistant to, 350
- increase due to DDT, 346

- insecticide control of, 350
pigment of, 62
population control, 144
Eristalis, 10
Erotylus sexascutatus, 125
Erythroneura, 90
Erythroneura variabilis
(grape leafhopper), 327
Essostrutha fimbriolata,
123
Estigmene chinensis, 125
Estigmenea variabilis,
125
Ethion, 348, 373
Ethological studies of in-
seet behavior, 207-34
afferent mechanisms, 219-
24
causation, 211-26
efferent systems, 211-19
cleaning behavior, 226
cocoon construction, 215
color preference, 220
comparative studies and,
226-29
courtship, 214-15
cyclic changes, 215-16
evolution of, 226-29
flower features, 221
genetics of, 228-29
hormone influence, 216
induced spinning, 215
instinctive activities, 212
nest building, 213
procryptic coloration,
208
protective displays, 208
reproductive behavior,
215
social releasers, 224-26
stereotyped motor pat-
terns, 212
Euaresta aequalis, 271
Eucosma griseana, 278
Eumenis, 222
Eumenis semele, 220
Eumysia, 260
Eupatorium adenophorum
control by insects, 252,
253, 259, 261, 268
Euproctis chrysorrhoea,
43, 282, 288
Euproctis terminalis, 168
European cabbageworm, see
Pieris brassicae
European corn borer, see
Pyrausta nubilalis
European pine sawfly, see
Necidiprion sertifer
European spruce sawfly, see
Diprion hercyniae
Eurygaster integriceps, 281
Eurynassa australis, 129
Eurytoma, 267
Eusleis, 80
Euscorpius, 209
Eusimulium, 93
Eustromula validum, 118
Euthystira brachyptera, 215
Eutreta xanthochaeta, 261
Euxanthellus, 169
Evaporation, 186
Evolution
and aphids, 139, 140
of aphis host relations,
152-57
arthropod-pathogen com-
bination, 389, 390
of behavior, 226-29
Cerambycidae, 99, 100
of fleas, 392
flower constancy and, 225
host specificity, 105, 106,
107
mimics and, 125
and parthenogenesis, 87
periods of, 99, 100
specialization, 255
Exochomus flavipes, 264
- F
- Fall webworm, see *Hyph-
antria cunea*
Fat body, 1
Fenkapton, 355
Filariaisis, 405
Fish
for bioassay of insecticide
residue, 337-39
Flea beetles, 374, 378
Fleas
and anemia, 406
and dermatitis, 406-7
and disease, 389-414
evolution of, 392
and filariasis, 405
and murine typhus, 390,
399-403
and myxomatosis, 403
parasites of, 408
and Pasteurella, 390
phylogeny, 392
and plague, 393-97
predators of, 408
and Salmonellosis, 399
taxonomy of, 391-92
Trypanosoma lewisi, 390
and trypanosomiasis,
403-5
and tularemia, 397-99
Tunga infestations, 407-8
Fly, 19
Food habits, 102-5
Fordinae, 142, 146, 155
Forficula, 6, 9
Forficula auricularia, 4
Formica rufa, 46
Formica rufa pratensis, 49
Frankliniella fusca, 379
Frankliniella tritici, 379
Fumea crassiorella, 218
Fungi, 129
high humidity and, 291
and insecticides, 293
pest control with, 280-82
Fungicides
combined with insecticides,
363, 369-74, 376, 380-81
and microbial control, 292-
93
systemic, 381
Fusarium, 281
- G
- Galerucella*, 14
Galleria, 9, 10, 215
Galleria mellonella, 2, 216
Gambusia affinis, 337
Gametogenesis, 18, 20
Gammarus pulex, 338
Gammasan, 374
Gastrophysa cyanea, 259
Gaurotes, 100
Generation time, 145
Genetics, 228, 322
Genetta dongolana, 391
Gerania bosci, 123
Gerbillus robustus, 391
Gibberella fujikuroi, 380
Gibberelic acid, 380
Giganteopalpus helleri, 122
Glenea, 99
Glenea pilota, 112, 113
Glossina, 390
Glossina morsitans (Tsetse
fly), 196
Glossina palpalis, 323
Glossina tachinoides, 324
Glucose, 26
Gnorimoschema operculella,
166
Goes, 103
Gonioctena, 93
Gorse, 269
Gorytes campestris, 44
Gorytes mystaceus, 225
Gracillia minuta, 104
Grape leafhopper, see
Erythroneura variabilis
Graphognathus fecundus, 87
Graphognathus imitator, 87
Grapholita molesta (ori-
ental fruit moth), 201, 328,
329
- Grasshopper
reproductive behavior, 215
tissue culture, 18, 19, 20
embryo, 23
ionic composition, 25, 26
media for, 29
organic acids in, 27
tissue extracts, 28
tracheation in, 22
see also specific names
Great Basin tent caterpillar,
see *Malacosoma fragilis*
Great Basin wireworm, see
Ctenicera pruinina noxia
Greenideinae, 146

SUBJECT INDEX

- Gregarina ctenocephalus**, 409
Growth-promoting materials, 380-81
Grylliidae, 89
Gryllus
 courtship, 209, 214-15
 instinctive activities, 212
Gryllus bimaculatus, 228
Guthion
 control by
 deciduous fruit insects, 348, 350, 355
 of seed-corn maggot, 373
Gymnaetron antirrhini, 260
Gymnospermae, 105
Gypsy moth, see *Porthetria dispar*
- H**
- Habrobracon brevicornis**, 165
Habrolepis roux, 170, 171
Haematobia stimulans, 192
Haemocytes
 cellular development, 1
 circulating, 2-3
 count of, 3-4
 fixed, 2-3
 functions of
 blood coagulation, 9-10
 connective tissue formation, 10-11
 growth stimulation, 13-14
 immunity, 6-8
 intermediary metabolism, 11-14
 nutritive, 11-12
 oenocytoids, 14
 phagocytosis, 5, 6-7, 10
 phenol metabolism, 13
 protection from metazoan parasites, 7-8
 in protein synthesis, 11
 staining of, 10
 types of, 4-6
Haemonia, 1
Haemopoietic organs, 2-3
Halogeton glomeratus, 272
Haltica pagana, 259, 270
Haltica virescens, 270
Hamamelis betulae, 64
Hamamelis spinosus, 64
Hammaderus, 103
Haplosporidia, 282
Harlequin bug, see *Murgantia histrionica*
Harrisina brillians, 280
Heat, 192-93
 see also Bioclimatics
Heliconius, 222, 224
Heliconius erato hydara, 220
Heliothis zea (corn earworm), 193
Heliotropium europaeum, 272
Helix aspersa, 32
- Hellula undalis**, 280
Hemiberlesia lataniae, 166
Hemimetabola, 97
Hemiptera
 blood-sucking, 390
 haemocytes, 1, 5, 9
 Müllerian mimicry, 126
 as parasites, 128
 pigments of, 65
 sex attractants, 45
 and *Trypanosoma* spread, 404
Hemirhipis, 128
Hemisarcopes malus, 238
Hemocytes, 23, 33
 see also Haemocyte
Hemolymph
 amino acid content, 26
 analyses of, 24
 as culture medium, 22, 25
 organic acids of, 27
 as tissue culture medium, 17
 as medium for, 29
- Heptachlor**
 control
 of carrot rust fly, 374
 of onion maggot, 374
 of plum curculio, 351
 of seed-corn maggot, 373
 of wireworms, 369-72
 fish sensitivity to, 337-38
 residual toxicity tests, 327, 332
 seed treatment, 366, 378
 T₅₀ test and, 336
Herpetomonas ctenocephali, 408
Herpetomonas ctenopsyllae, 409
Herpetomonas debreuli, 409
Herpetomonas pattoni, 408, 409
Heterocampa manteo, 2
Heteropalpus pretiosus, 122
Heteroptera, 45, 142
Heteropilus prosopidis, 243
Hibernation, 120
Hippopsis, 122
Hippopsis lemniscata, 111
Hirsutella, 281, 292
Holometabola, 8, 139
Homaesthesia, 103
Homoptera, 90, 140, 142
Honey bee, see *Apis mellifera*
Hopliocampa testudinea (European apple sawfly), 351-52
Hoplocerambyx, 117
Hoplocerambyx spinicornis, 108
 emergence of, 113, 114
 longevity of, 113, 115
 mating of, 119
 olfactory sense of, 118
Hoplopsyllus, 403
Hoplopsyllus glacialis, 398
Hoplopsyllus glacialis glacialis, 407
Hormaphidinae, 155
Hormaphis, 155
Hormones, 27, 216
Horogenes molesta, 166, 329
Host
 distribution of parasite progeny in, 240-42
 parasite populations, 243-45
 parasite populations, experimental, 235, 250
Specificity
 attraction to plant, 117
 and biological control, 254
Cerambycidae, 105-8
 chalcidoidea, 94
 in Homoptera, 90
 in Hymenoptera, 166-72
Host-parasite specificity, 389
Host-selection, 106-7
Humidity
 effect on
Cerambycidae, 130
 host-parasite populations, 238, 239
 insecticide-residues, 324
 and insect development, 185-86
 see also Bioclimatics
Hyalophora cecropia (cecropia moth)
 spermatogenesis, 30
 tissue culture, 18, 22, 23
Hyalopterus pruni, 151
Hybolasius, 102
Hydrogen ion concentration, 31
Hylemya antiqua (onion maggot), 373-74, 380
Hylemya brassicae (cabbage maggot), 374
Hylemya cilicrura (seed-corn maggot)
 control of, 366, 368
 seed treatment for control of, 372-73
 systemic materials in control of, 380
Hylemya floralis (turnip maggot), 374
Hylobius pales, 90
Hylobius radicis, 90
Hylotrupes
 feeding, 115
 mating, 117
 olfactory sense of, 118
Hylotrupes bajulus
 food of, 104
 length of life, 114
 pest for dry wood, 109

- physical factors effect on, 130
Hymenolepis diminuta, 406
Hymenoptera
 bacterial control of, 280
 biology of parasitic, 161-82
 diapause, 163-66
 host specificity, 166-72
 nutrition, 177-79
 respiration, 179
 sex determination, 172-77
 venom, 179-80
 color preference in, 224
 embryonic determination, 23
 flower feature attractions, 221
 marking scents of, 45-46
 marking substances, 48
 mimics of, 125
 orientation in, 224
 as parasites, 127, 128
 parthenogenesis in, 172-77
 sex attractants, 44
 taxonomy of, 94
Hyena jussalis, 261
Hypera brunneipennis, 188
Hypera postica, 187, 195, 198
Hypericum androsaemum, 266
Hypericum perforatum (Klamath weed), 259, 265-67
Hyphantria cunea
 bacterial control of, 280
 microsporidian infection of, 294
 protozoan control, 282
 virus epizootics in, 292
Hypocephalus, 126
Hypocephalus armatus, 127
Hypolimnus misippus, 220
Hypostrater disparis, 167
Hystrichopsylla, 392
Hystrichopsylla talpae, 409
- I**
- Idechthis canescens*
 host habitat, 167, 169
 host-parasite equilibrium, 243
 parthenogenesis in, 172
 temperature and humidity influence, 238
Imported cabbageworm, see *Pieris rapae*
Insect control by seed treatment, 363-88
 factors influencing, 363-69
 biological differences, 368
 chemicals used, 364-66
 insect-dependent factors, 368
- I**
- Insect-independent factors**, 364-68
 microflora, 367-68
 planting practice, 367
 populations, 368
 seed factors, 364
 soil, 366
 species, 368
 insects controlled, 369-78
- Insecticides**
 biological assay for residues
 cage method, 328-29
 coated cage method, 326-28
 coated plate method, 324-26
 with Crustacea, 337-39
 with fish, 337-39
 impregnated cloth method, 323-24
 impregnated paper method, 321-23
 photomigration method, 334-37
 in plant materials, 330-37
 on substrata, 320-30
 combined with fungicides, 363, 369, 369-74, 376, 380-81
 compatibility with microbial control, 292-93
 deposit, definition, 319
 mode of action of, 303-18
 aldrin, 307-10
 DDT, 303-7
 organophosphorus, 310-14
 SH-enzyme inhibitors, 314-15
 residues
 on animal materials, 330-37
 in soil, 329
 systemic, 378-80
 systemic action, 378-80
- Insectoverdins**, 68-69
- Insects and epidemiology of malaria**, 415-34
 see also Malaria, epidemiology of
- Instinctive activities**, 212, 213
- Instincts**, see Instinctive activities
- Iphiaulax*, 127
Ipochus, 120
Ips, 90
Isaria, 129
Ischnolea, 122
Isodrin, 307
Isoptera, 210
Ites, 125
Ixais castelnaudi, 125
- J**
- Jack-pine budworm**, see *Choristoneura pinus*
- Jack-pine sawfly**, see *Neodiprion americanus banksianae*
- Jamwonus**, 121
- Japanese beetle**, see *Popillia japonica*
- June beetle**, see *Phyllophaga lanceolata*
- Juniperus bermudiana**, 260
- K**
- Kalotermes flavicollis**, 49-50
- Kelthane**, 355
- Kermesococcus ilicis**, 61
- Khapra beetle**, see *Trogoderma granarium*
- Klamath weed**
 control of by insects, 257, 265-67
 see also St. Johnswort and *Hypericum perforatum*
- Korlan**, 373
- Koster's curse**, see *Clidemia hirta*
- Kotochalia junodi** (wattle bag-worm), 279, 287, 290
- L**
- Lablab podborer**, see *Adisura atkinsoni*
- Laccifer lacca**, 61
- Lachnidae**, 155
- Lachnostenra**, 378
- Laemophloeus**, 224
- Lagocheirus**, 112
- Lagocheirus funestus**, 263, 264, 265
- Lamiinae**
 Batesian mimicry, 125
 coloration, 126
 cryptic coloration, 122
 distribution, 100, 102
 economic importance, 110, 111
 feeding habits, 115
 hibernation, 120
 host specificity, 105
 as human food, 129
 mating, 116, 117
 oviposition of, 119
 sexual dimorphism, 122
 sound production, 118
 wingless forms, 126
- Lantana camara**
 biological control of, 258, 260-62
 value of, 253
- Laphygma exigua**, 379
- Larch bud moth**, see *Eucosma griseana*
- Larch sawfly**, see *Pristiphora erichsonii*
- Lasioceris**, 119

SUBJECT INDEX

- Lasioderma serricorne*, 200
Lasius alienus, 48-49, 86
 Lead arsenate control by of plum curculio, 350 of wireworm, 371 residues of, 319 soil residual toxicity of, 329 as stomach poison for codling moth, 345 Leafminers, 379 *Lebistes reticulatus* (guppies), 337 *Legerella grassi*, 409 *Legerella parva*, 408 *Lema*, 92 Lepidoptera bacterial control of, 280 carotenoids, 60, 61 color preference, 224 courtship of, 209 eyespots, 224 haemocyte count, 5 nutritive function, 12 haemopoietic organs of, 2 parasites of, 8 physical properties and a definite response, 219 pigments of, 65, 66, 68 resistant to *Beauveria bassiana*, 286 sex attractants, 40-43 taxonomy of, 94 tissue culture, 24 *Lepidosaphes beckii*, 281 *Lepidosaphes newsteadi*, 260 *Lepidosaphes ulmi* (oyster-shell scale), 237, 353 *Lepisma saccharina*, 209 *Leptinotarsa decemlineata* (Colorado potato beetle) carotenoids of, 60 comparison of climates for, 199 fungi control of, 281 haemocyte count, 3, 4, 6 potential infestation of Germany by, 197 *Leptocoris*, 125 *Leptohylemyia coarctata*, 374 *Leptomonas pulicis*, 409 *Leptopsylla segnis*, 409 *Leptopeltis musculi*, 401 *Leptospermum scoparium*, 259, 268 *Leptostylus*, 111 *Leptostylus terraecolor*, 111 *Leptothorax tuberum unifasciatus*, 49 *Leptura*, 104, 112 *Leptura rubra*, 104 *Lepturus spermophilus*, 111 *Lepturinae*
- Batesian mimicry*, 124, 125 distribution of, 100, 102 feeding habits, 115 host specificity, 105 mating, 117 oviposition of, 119 sound production, 118 symbioses of, 103 wingless forms, 126 *Lepturini*, 116, 119, 123 *Lepus americanus*, 398 *Lethocerus indicus*, 45 *Leucographis*, 119 Light, 345, 353 see also Bioclimatics Light intensity, 187 Lime-sulphur, 328 Liminites, 220, 224 *Limonius agonus* (eastern field wireworm), 372 *Limonius californicus* (sugar-beet wireworm), 368 *Limonius canus* (Pacific Coast wireworm), 366, 368 *Linaria dalmatica*, 272 *Linaria vulgaris*, 260, 272 Lindane control by of carrot rust fly, 374 of flea beetles, 378 of seed-corn maggot, 372-73 of wheat bulb fly, 374 of wireworms, 364, 365, 368, 369-72 of woolly apple aphid, 350 fish sensitivity to, 337 masking technique, 323 overdosage of, 376 plant residual toxicity testing for, 332, 333 residual toxicity of, 324, 326-28 seed treatment, 366-68, 378 spray treater for applying, 377 tests for residue, 324 T_{50} test and, 336 see also γ -BHC *Liothrips urichi*, 267 *Liponyssus bacoti*, see *Ornithonyssus bacoti* *Liriomyza*, 179, 379 *Lissorhoptrus oryzophilus* (rice water beetle), 378 *Lithocelletis*, 349 *Lithocelletis crataegella*, 349 *Lithophane antennata*, 353 *Lixus algirus*, 270 *Locusta migratoria*, 3, 61 *Locusta migratoria migratorioides*, 284 *Loemopsylla cheopsis*, 391
- Longitarsus*, 374, 378 *Lophogonion crinitus*, 112 *Lophopoeum timbouvae*, 111 *Loxostege*, 164 *Loxostege frustralis*, 169 *Loxostege sticticalis*, 169 *Lucilia cuprina*, 28 *Lucilia sericata*, 311 *Lycaena phlaeas*, 78 Lygaeidae, 65 Lygesis, 125 Lygidea mendax, 353 *Lygus*, 327 *Lymantria dispar*, see *Porthetria dispar* *Lymantria monacha* (Nun moth), 284, 292 *Lyonetia clerckella*, 353
- M
- Macrocentrus aencylavorus*, 322, 329 destruction by *Nosema destructor*, 294 oviposition rate and humidity, 185 rearing of, 166 sex ratio of, 176 *Macrodontia*, 121 *Macropis labiata*, 44 *Macrosiphoniella sanborni*, 321 *Macrosiphum pisi*, 285, 380 see also *Acrythosiphon pisum* *Macrosiphum solanifolii*, 281 *Macrotoma*, 121 *Macrotoma hayesi*, 122 *Macrotoma palmata*, 104 *Magicicada septendecim*, 353 *Malacosoma*, 18 *Malacosoma disstria*, 278 *Malacosoma fragilis*, 278, 290 *Malacosoma neustria*, 282 Malaria endemic, 419 epidemiology of, 415-34 *Anopheles* dispersal by transportation, 420 basic principles, 415-16 mathematical, 416-20 *Plasmodium* life cycle, 415, 417 reproduction rate, 418 vector density, 418 eradication, 421, 430, 431 status of, 420-31 vectors of, 420, 421, 422-25 species lists, 420-31 *Malathion*, 314, 350 *Mallambyx raddei*, 116 *Malleomyces pseudomallei*,

- 409
Mallophaga, 390
Malpighiella refringens, 409
Manuba, 268
Margasus afzella, 128
Marmota bobac, 396
Marmota monax, 402
Massospora, 285
Mating, 116
Mealworm, see *Tenebrio molitor*
Mecas, 103
Mecas saturnina, 271
Meconemis varia, 61
Media for tissue culture, 24-30
Mediterranean flour moth, see *Anagasta kuhniella*
Mediterranean fruit fly, see *Ceratitis capitata*
Megabothris walkeri, 398
Megachile, 125
Megacyllene, 128
Megacyllene antennatus, 129
Megacyllene caryae, 129
Megacyllene robiniae, 112
Megasoma elephas, 221
Megopis, 108
Megoura viciae, 108, 147, 148
Melanargia galathea, 65
Melanins, 73
Melanoplus mexicanus, 78
Melanoplus puer, 84, 89
Melanoplus spretus, 78
Melanotus, 372
Melaphis, 142
Melastoma malabathricum, 272
Melipona, 125
Melitara dentata, 259
Melitara doddalis, 265
Melitara prodenialis, 265
Melittobia, 175
Melolontha, 279, 294
Melolontha hippocastani, 329
Melolontha melolontha, 279, 291
Meltzerella lutzii, 125
Mercuric chloride, 271
Mermiria maculipennis, 89
Meroscelisus, 127
Meroscelisus violaceus, 123
Mesoleius tenthredinis, 7, 170
Mesosini, 124
Metabolism
 haemocytes in intermediary, 11-14
 oxidative, effect of DDT, 330-5
 phenol, 13
 and tissue culture, 33
Metamorphosis
 glycogen and, 11
 and hormones, 27
 phagocytosis, 6
 vitamin deficiency, 53
Metaphycus helvolus, 165, 178
Metarrhizium anisopliae, 281, 287
Metatetranychus citri, 281
Methia, 112, 125
Methiini, 125
Methoxychlor
 control by
 of codling moth, 347
 of plum curculio, 351
 effect on oxidative metabolism, 303
 fish sensitivity to, 337-38
 plant residual toxicity testing for, 332
 residual toxicity tests for, 328
 soil residual toxicity of, 329
T₅₀ test and, 336
Mexican bean beetle, see *Epilachna varivestis*
Mexican fruit fly, see *Anastrepha ludens*
Microbial control of pests, 277-302
 compatibility
 with adjuvants, 292-93
 with antibiotics, 292-93
 with fungicides, 292-93
 with insecticides, 292-93
 with other biological control agents, 293-94
 effect of physical environment, 291-92
 host resistance, 286-87
 infection, 283-84
 methods of application, 288-90
 methods of dispersal, 284-86
 persistence in field, 290-91
 transmission of, 283-84
 use of pathogens, 278-83
 by algae, 282-83
 by bacteria, 279-80
 by fungi, 280-82
 by nematodes, 282-83
 by protozoa, 282
 by viruses, 278-79
 virulence, 287-88
Microctonus gastrophysae, 259
Microctonus vittatae, 169
Microcytus, 103
Micropera obletum, 109
Microsporidia, 282, 293
Microtus pennsylvanicus, 402
 pennsylvanicus, 402
Migration, 148-50
Migratory grasshopper, see *Melanoplus mexicanus*
Milky-disease, see *Bacillus popilliae*
Mites, 281, 346
 spider, 379
Mitosis, 18-29, 33
Moisture
 in climate classification, 189, 190
 effect on host-seeking behavior, 219
 limiting insect distribution, 195-97
 seed treatment, 364
 see also *Humidity*
Molochrus, 112, 125
Moneilema, 126, 259, 265
Moneilema armata, 265
Moneilema crassa, 265
Moneilema ulkei, 112, 263, 264
Moneilema variolare, 263
Monochamus, 115
 digestive enzymes, 105
 economic importance, 109
 feeding habits, 115
 mating, 117
Monochamus scutellatus, 129
Monochamus titillator, 130
Monopsyllus scurorum, 409
Morimopsini, 126
Morimus, 126
Mormoniella, see *Nasonia*
Mormoniella vitripennis
 host finding, 167, 219, 245
 host protection against, 244
Morpho, 123
Morphogenesis, 19, 20, 33
Mortality, 127-30, 241
Mosquitoes
 malarial parasite of, 24
 sexual isolation, 94
 tissue culture, 19, 20, 22, 25, 26
 media for, 28, 29
 motor patterns, 219
Murgantia histrionica (Harclequin bug), 193
Murine typhus, 390
Musca
 haemocytes of, 2
 haemopoietic organ, 3
 instinctive activities, 212
 tissue culture, 18
Musca domestica
 ACh in, 306, 312
 aldrin effect on, 307, 309
 γ -BHC effect on, 307
 cleaning behavior, 226
 DDT effect on, 304, 306
 DDT residue testing with, 321, 325-27
 DDVP effect on, 314
 DEP effect on, 312
 determining insecticides in milk with, 333, 334
 DFP effect on, 313
 insecticidal residues in, 330-31
 lindane residue and, 325
 malathion effect on, 314
 parasite for, 245

SUBJECT INDEX

- sexual pump release, 223
 SH-enzyme inhibitors, 314-15
 tests for insecticide residue, 321
Musca domestica vicina, 326
Mus gentilis, 391
Mus musculus, 402
Mycobacterium leprae, 409
Myiophagus, 281, 292
Myrica faya, 272
Myrmecophily, 155-56
Myrmecophytes, 167
Myxomatosis, 403
Myzus persicae
 color contrast in, 150
 feeding of, 140, 141
 host selection, 151, 152
 migration of, 149, 150
- N**
- Naedius elegans*, 125
Nasonia, 164
Nasonia vitripennis, 167
Nassanoff pheromone, 46
Necydalini, 124
Nematocera, 226
Nematodes
 high humidity and, 291
 pest control with, 282-83
 physical factors and, 291
Nematus vagus, 94
Nemeritis canescens, 8, 167
Nemobius, 89
Nemobius carolinus, 228
Nemobius confusus, 228
Nemobius maculatus, 228
Nemobius melodus, 228
Neoplectana glaseri, 288
Neoplectana leucaniae, 285, 288
Neocatolaccus mamezophagus, 243, 245
Neoclytarlus, 108
Neoclytus, 107, 128
Neoclytus conjunctus, 112
Neodiprion, 94
Neodiprion americanus banksianae, 278
Neodiprion sertifer, 278, 290, 292
Neonema ctenophthalmi, 405
Neonitocris, 125
Neonitocris princeps, 128
Neopsylla setosa, 398
Nezara viridula, 65
Nicotine, 351
Nomenclature, see Classification and Taxonomy
Noogora bur, 271
Nosema, 19
Nosema bombycis, 282
Nosema ctenocephali, 408
Nosema destructor, 294
Nosema infesta, 282
Nosema lymantriae, 288
Nosema pulicis, 408
Nosopsyllus fasciatus, 399, 401, 406, 408, 409
Nothorhina, 119
Notonecta, 219
Nun moth, see *Lymantria monacha*
Nupserha, 120
Nupserha antennata, 260, 271
Nutgrass, 271-72
Nutrition
 of aphids, 143-44
 cellular, and tissue culture, 33
Hymenoptera, parasitic, 177
Nyctemera annulata, 269
Nygma phaeorrhoea, 282
- O**
- Oak processionary caterpillar*, see *Thaumetopoea processionea*
Oberea, 102
 damage by, 110
 oviposition of, 119, 120
Oberea bimaculata, 110
Obrioni, 122
Ochraethes, 123
Octotoma plicatula, 261
Octotoma scabripennis, 261
Odonata
 courtship of, 209
 embryonic determination, 23
 sexual pursuit flight, 221
 tissue element, 10
Odontopygus, 403
Odontopygus multispinosus, 398
Oecanthus, 89
Oedipoda, 227
Oedipoda caerulescens, 61
Oedipoda miniata, 61
Oikocytes, 1
Olfactory sense, 118
Olycella junctolineela, 263
Ommochromes, 69-73
Oncideres, 102, 119, 120
Oncideres cingulatus, 120
Oncideres dejeanii, 69, 120
Oncopeplus, 11
Onychiurus, 373, 378
Operophtera brumata, 349
Ophiomyia lantanae, see *Agromyza lantanae*
Opisocrotis, 408
Opium tryoni, 252
Opuntia, 252, 253
Opuntia aurantiaca, 263, 264
Opuntia dilleni, 263
Opuntia elatior, 263
Opuntia megacantha, 262-65
Opuntia tuna, 265
Opuntia vulgaris, 262-65
Orchopeas sexdentatus, 404
Orchopeas wickhami, 404, 408
- Oriental fruit moth, see *Grapholita molesta*
Ornithodoros, 389
Ornithonyssus bacoti, 401
Orteguaze, 122
Orthezia annae, 260
Orthopodomyla, 94
Orthoptera
 carotenoids of, 60, 61
 courtship, 209
 embryonic determination, 23
 nutrition of, 143
 ommochromes, 69
 pigments of, 65, 68
 sex attractants, 44
 songs of, 221
 taxonomy of, 89-90
Oryctes, 2, 18
Oryctes nasicornis, 1
Oryctes rhinoceros, 281
Oscinella frit (frit fly), 374
Ostrya virginiana, 92
Otiorhynchus ligustici, see *Brachyrhynchus ligustici*
Otiorhynchus scaber, 87
Overwintering, see *Hibernation*
Ovex, 328
Ovogenesis, 178
Oviposition, 119-20
Oxymirus cursor, 104
Oystershell scale, see *Lepidosaphes ulmi*
- P**
- Pachyrhynchus*, 125
Pachyteria, 117
Pacific Coast wireworm, see *Limonius canus*
Pale western cutworm, see *Agrotis orthogonia*
PAM, 313, 314
Pamakan, 268
Panonychus ulmi (European red mite), 346, 353-55, 356
Paramecium bursaria, 242
Paramecium caudatum, 242
Parandra, 108
Parandrinae
 distribution, 100, 102
 host specificity, 105
 oviposition of, 119
Paraprociphilus, 155
Parasites
 aphids as, 140-46
 of *Cerambycidae*, 127-29
 definition of, 161-62
 density relationships of
 host and, 241
 distribution of among hosts, 240
 effect on populations, 236

- host populations, 243-45
metaxan, 7-8
Parasitoid, 161
- Parathion**
control by
of apple flea weevil, 351
of codling moth, 347,
348
of European apple sawfly,
352
of flea beetles, 378
of *Panonychus ulmi*, 355
of plum curculio, 351
seed treatment, 278
of woolly apple aphid,
350
lethal action of, 313
and microbial control, 293
residual toxicity testing
in, 324, 327, 329, 331-
33
- T₅₀ test and, 336
- Paratimia conicola**, 107
- Paris Green**, 371
- Parlatoria oleae**, 166
- Parmenini**, 124, 126
- Parthenogenesis**
in aphids, 140
evolution, 87
in Hymenoptera
categories of, 172-73
taxonomy in, 87-88
- Pasteurella pestis**, 390,
393-97
- Pasteurella tularensis**, 390,
397-99
- Pauridia peregrina**, 171
- Pea aphid**, see *Acyrtosiphon pisum* and *Macrosiphum pisi*
- Pectinophora gossypiella**
(pink bollworm), 197
- Pediculus humanus**, 2, 39, 323
- Pegohylemyia jacobaeae**, 270
- Pemphigidae**, 142, 147,
154
- Penicillium frequentans**,
368
- Penicillium gladioli**, 368
- Pentatomidae**, 65
- Peptone**, 27
- Perezia pyraustae**, 282
- Peridroma margarita**,
32
- Perilissus coccinellae**, 169
- Periphyllus**, 146, 153
- Periplaneta americana**
(American cockroach)
ACh effect on, 306, 311
aldrin effect on, 309
 γ -BHC effect on, 305, 309
DDT effect on, 304, 305,
306, 307, 309
haemocytes of, 2
pigments of, 68
sex attractants, 44
SH-enzyme inhibitors
- in, 315
TEPP effect on, 312
tissue culture, 28, 29
- Periplaneta fuliginosa**, 305
- Perisierola emigrata**, 179
- Peromyscus leucopus nove-
borascensis**, 402
- Perperus vermiculatus**, 351
- Petrognatha**, 122
- Petrognatha gigas**, 119
- Phaeolus**, 123
- Phaedon cochleariae**, 380
- Phagocytosis**, 5, 6-7, 10-
11
- Phanerotoma grapholithae**,
329
- Phaonia**, 3
- Pharsalia saperdoides**, 122
- Pheidole pallidula**, 48-49
- Pheromones**, 39-58
definition, 39-40
olfactory acting, 40-46
marking scents, 45
sex, 40-45
orally acting, 47-53
ant queen, 48-49
honey bee queen, 47-48
royal jelly determining
factor, 51-53
of termites, 49-51
- Philanthus**, 224
- Philini**, 126
- Philosamia ricini**, 61
- Philus**, 111
- Phlebotomus**, 405
- Phoracanthini**, 122
- Phormia**, 2
- Phormia regina**, 218
- Phratora purpurea**, 92
- Phryganidia californica** (Cal-
ifornia oakworm), 292
- Phryneta**, 119
- Phryneta aurocincta**, 119
- Phryneta spinator**, 129
- Phyllophaga lanceolata**, 44
- Phylloreta**, 169, 374, 378
- Phylloxeridae**, 63, 140,
142
- Phylogeny**, 227, 392
- Phynata**, 128
- Phymatodes**, 104
- Physalis**, 92
- Physcus**, 169
- Physocnemum brevilineum**,
103, 105
- Physonota alutacea**, 267
- Phytoecia**, 111, 119
- Pidonia**, 103
- Pieridae**, 66, 68, 282
- Pieris**, 2, 222
- Pieris brassicae**
Apaneles glomeratus in-
fection in, 294
carotinoids of, 60, 61
color preference, 220
control by microbes,
279, 280
- food ingestion rate, 141
limits on distribution, 194
- parasite relationship**, 164
- persistence of bacterial
infection in, 290
- pigments of, 68
- Pieris bryoniae**, 219, 220
- Pieris napi**, 219, 220
- Pieris rapae**
carotenoids, 60
control by microbes, 279,
280
virus infections in, 287
- Pigments**, 59-76
anthocyanins, 65
anthoxanthins, 65
anthraquinones, 61-62
aphrins, 62-64
bile, 68-69
carotenoids, 60-61
insectoverdins, 68-69
melanins, 73
ommochromes, 69-73
pterins, 65-68
see also Coloration
- Pimpla bicolor**, 168
- Pinaceae**, 106
- Pine processionary cater-
pillar**, see *Thaumetopoea pityocampa*
- Pink bollworm**, see *Pectin-
ophora gossypiella*
- Pipturus mysus**, 108
- Piri-piri**, 270-71
- Pissodes**, 90
- Plagiohammus spinipennis**,
112
- Plagithmysus**, 119
host specificity, 108
- Plagodis**, 80
- Plague**, 391, 393-97
bacillus
first discovery, 393-94
and fleas, 393-97
history of, 393-97
sylvatic, 391
- Xenopsylla cheopis** as
carrier, 395-97
- Plasmodium falciparum**,
415, 417
- Plasmodium malariae**, 415, 417
- Plasmodium ovale**, 415, 417
- Plasmodium vivax**, 415, 417
- Platycnemis**, 221
- Platytilla pusillidactyla**,
261
- Platysamia cecropia**, 215
cocoon construction, 215
- Plectrodera**, 119
- Plectrura**, 100, 120
- Plesiocorus rugicollis**, 353
- Plodia**, 43
sex attractants, 43
- Plum curculio**, see *Cono-
trachelus nenuphar*
- Plusia gamma**, 279
- Plutella maculipennis**

SUBJECT INDEX

- DDT relations with, 321
host finding of parasite for, 168
microbial control of, 280
mortality in, 237
Podisma, 227
Poekilosoma, 122
Pogonocherus hispidus, 120
Poliates, 210, 214
Poliates exclamans, 294
Polychrois botrana, 43
Polyembryony, 177
Polyethylene glycol, 366
Pompiidae, 227
Pomphilus plumbeus, 228
Popillia, 9, 10
Popillia japonica (Japanese beetle)
control by rickettsiae, 279
insecticide residual toxicity tests for, 321, 327
milky-disease, 290
moisture and distribution, 196
nematode infection in, 288
Population density-dependent mortality factor, 295
dynamics, 161, 251
abiotic, 251, 252
biotic, 251, 252
experimental host-parasite, 235-50
biotic interactions effect, 240-47
relation to natural, 236-37
in fields of aphids, 144-46
host-parasite, 243
physical environment effect on, 237-39
models of host-parasite interaction, 245
mortality of, 127-30
insect disease as factor, 294-95
natural, 237
parasite and host, 168
predator-prey, 242-43
regulation of by diseases and parasites, 293
- Q
- Q fever**, 400
- R
- Ranova, 119
Rattus, 402
Red-banded leaf roller, see *Argyrotaenia velutinana*
Reduviids, 9
Reproductive behavior, 215
Rhagionidae, 128
Rhagionycha fulva, 117
Rhagium, 103
digestive enzyme in, 104, 105
emergence of, 112
feeding habits, 115
parasite of, 128
Rhagoletis cingulata (cherry fruit fly), 328
Rhagoletis pomonella (apple maggot), 352-53
Rhinatragini, 125
Rhinoceros beetle, see *Oryctes rhinoceros*
Rhinocorus nitidulus, 128
Rhipidocerus, 121

- Rhizobium leguminosarum, 373
 Rhizoctonia, 369
 Rhodnius
 blood coagulation in, 9
 haemocytes, 1, 2
 nutritive role of, 11-14
 types of, 4
 metamorphous in, 6
 tissue formation, 10
 Rhodnius prolixus, 24, 69
 Rhopalocera, 224, 227
 Rhopalopus, 100
 Rhopalosiphum maidis, 142, 150
 Rhynacantha buoliana (European pine shoot moth), 193
 Rhynchaenus pallicornis (apple flea weevil), 351
 Rhynchosia pauxillus, 351
 Rhynchophora, 90
 Rice water beetle, see *Lissorhoptrus oryzophilus*
 Rice weevil, see *Sitophilus oryzae*
 Rickettsia burnetii, 409
 Rickettsia rickettsii, 400
 Rickettsia typhi, 399-403
 Rocky mountain grasshopper, see *Melanoplus spretus*
 Romalea, 105
 Romalea atomarium, 130
 Ropica dorsalis, 111
 Rosaceae, 271
 Rosalia, 100
 Rotenoid, 337
 Ryania, 348
- S
- St. Johnswort (Klamath weed), 258, 265-67
 Salicaceae, 154
 Salix, 91, 92
 Salmonella enteritidis, 399
 Salmonella typhimurium, 399
 Salmonellosis, 399
 Salvia aethiopis, 272
 Sembucus, 103
 Samia cynthia, 30
 San Jose scale, see *Aspidotus perniciosus*
 Saperda, 103
 damage by, 110
 host specificity, 106, 107
 oviposition of, 119
 Saperda calcarata, 118, 127
 Saperda carcharias, 129
 Saperda hornii, 112
 Saperda tridentata, 110
 Saphanius, 103
 Sarcophaga, 3, 9, 13
 Sarcophaga bullata, 5, 13
 Sarcophaga caranaria, 226
 Sarcophaga falculata, 5
 Sarifer flaviramus, 121
 Saturnioidea, 228
 Sawfly, 2
 Scales, 281, 292
 Schematiza cordiae, 256, 259, 267
 Schistocera gregaria, 141, 143, 218
 Schizogregarina, 282
 Schizomypha, 378
 Schoenobius incertulus, 380
 Schradan
 control by
 of cotton insects, 379
 of frit fly, 374
 as systemic agent, 379-80
 Schreckstoffe, 40
 Schreiteria bruchi, 126
 Sciadelle saltator, 127
 Sciaria, 93
 Scolytus rugulosus, 353
 Scopeuma stercorarium, 192
 Screw-worm, see *Callitroga hominivora*
 Seed treatment for insect control, 363-88
 Selection, ethological, 169
 Semanotu 106
 Senecia jacobaea, 259, 269-70, 272
 Sevin, 348
 Sex
 attraction by scent, 220
 determination
 in arhenotokous species, 174-76
 in parasitic Hymenoptera, 172-77
 meiosis in the haploid male, 174
 viability of haploid males, 173-74
 dimorphism, 125
 forms in aphids, 146, 147
 isolation and songs, 221
 jump in *Musca domestica*, 223
 ovogenesis, 178
 ratio and
 mechanics of fertilization, 176-77
 responses to scent, 222
 Sex attractants, see *Pheromones*, olfactory acting
 SH-enzyme inhibitors, 314-15
 Silkworm, see *Bombyx mori*
 Siphona irritans, 192, 334
 Siphonaptera, 390
 Sitophilus granarius, 191-92
 Sitophilus oryzae (rice weevil), 78, 191-92, 327
 Smerinthus ocellatus, 208
 Smodicum, 104, 121
 Smynthus viridis, 195
 Social releasers, 224-26
 Solenopsis molesta (thief ant), 378
 Solenotus begini, 179
 Somatidia, 102
 Songs, 209, 221
 Southern corn rootworm, see *Diabrotica undecimpunctata*
 Spalacopsis, 121, 122
 Spalangia drosophilae, 163, 164
 Species, see Taxonomy
 Spermatogenesis, 174
 metabolic inhibitors of, 30
 tissue culture, 20, 22
 Sphingidae, 228
 Sphinx ligustris, 61, 68
 Spiders
 courtship, 224
 stereotyped motor patterns of, 212, 214
 waning of response, 218
 web building comparison, 227
 Spilonota holotrephes, 259
 Spilonota ocellana, 353
 Spilopyllus cuniculi, 398, 403, 404
 Spirochaeta ctenocephali, 409
 Spondylinae
 distribution of, 100
 host specificity, 105
 oviposition, 119
 symbioses of, 103
 Spondylis, 100, 112, 119
 Sporostrichum globuliferum, 129
 Spotted alfalfa aphid, see *Theroaphis maculata*
 Spotted fever, 400
 Spruce budworm, see *Choristoneura fumiferana*
 Stachytarpheta jamaicensis, 272
 Stagmomantis limbata, 89
 Staphylococcus albus, 7
 Starvation tests, 255-56
 Steina rotundata, 409
 Steinernematidae, 282
 Stenagostus, 128
 Stenaspini, 122, 123
 Stenobracon deesae, 170
 Sterilization, 32
 Steracanthus undatus, 125
 Stereotyped motor patterns, 212
 Sternotomini, 123
 Stictocephala bubalus, 353
 Stomatoceras rubrum, 167
 Stomoxys calcitrans, 334
 Strepsicrates smithiana, 272

SUBJECT INDEX

- Stromatium, 115, 119
 Stromatium barbatum, 106,
 109, 113
 Stromatium fulvum, 104
 Stromatium longicorne,
 109
 Strychnine, 371
 Stylopus, 102, 112
 Sugar-beet wireworm, see
 Limonius californicus
 Sybra alternans, 111
 Syllitus, 117
 Sylvilagus brasiliensis, 403
 Sylvilagus floridanus, 398
 Symbiosis, 103-5, 162
 Symbiote, 103, 144
 Synapheta, 112
 Syngamia haemorrhoidalalis,
 261, 262
 Syrphus ribesii, 7
 Systematics, see Taxonomy
 Systox, 350, 355
 see also Demeton
- T
- Tabardillo, 399
 Tansy ragwort, 269
 Tarsonemus pallidus, 242,
 243
 Taxodiaceae, 106
 Taxonomy
 Cerambycidae, 100
 concepts of, 79-88
 multidimensional species,
 83-87
 nondimensional species,
 81-83
 parthenogenetic forms,
 87-88
 polytypic species, 83-87
 subspecies, 85-86
 typological species, 79-
 81
 of fleas, 391-92
 methods, 88-95
 biochemical, 95
 Coleoptera, 90-93
 Diptera, 93-94
 Homoptera, 90
 Hymenoptera, 94
 Lepidoptera, 94-95
 Orthoptera, 89-90
 species definition, 79
 see also Classification and
 Nomenclature
 TDE, 328, 332
 Telomone, 54
 Teleonemia lantanae, see
 Teleonemia scrupulosa
 Teleonemia scrupulosa,
 261, 262
 Teleonemia vanduzeei, 261
 Temnochila, 127
 Temperature
 in climate classification,
 189, 190
- effect on
 aphids, 147
 Cerambycidae, 129-30
 emergence, 115
 host-parasite populations,
 238, 239
 host-seeking behavior,
 219
 insecticidal properties,
 327
 insecticide residues,
 324
 males in deuterothokous
 species, 176
 sexuality of uniparental,
 172
 treated seed, 366
 and humidity, 185-86
 insect development, 184-
 85
 limiting insect distribution
 cold, 192-94
 heat, 194-95
 in tissue culture, 30
 Tenebrio, 3, 4
 Tenebrio molitor
 DDT effect on, 304
 haemocytes of, 2
 and parasites, 8
 sex attractant, 44
 Tenebrioides, 127
 Tenthredinidae, 2
 TEPP
 effect on roaches, 312-14
 lethal action of, 310, 313
 microbial control and,
 293
 Tereticus, 121
 Termites, 49-51, 227
 Tetanops myopaeformis
 (sugar-beet root mag-
 got), 378
 Tetranychus, 346
 Tetranychus desertorum,
 263
 Tetranychus opuntiae, see
 Tetranychus desertorum
 Tetraopes, 103, 123
 Tetrasichus, 259
 Tetrix, 227
 Tetropium, 112
 Tetropteron gabrieli, 106, 129
 Tettigonia, 61
 Tettigoniidae, 89
 Thanatus, 127
 Thaumetopoea pityocampa,
 278, 279
 Thaumetopoea processionea,
 280
 Thecla bazochi, 261, 262
 Thecla echion, 255, 261
 Thelaxidae, 142, 146, 155
 Thelohania hyphantriae,
 282
 Thelohania similis, 288
 Thelyotoky, 172
 Theroaphis maculata (spot-
 ted alfalfa aphid), 380
 biological and microbial
 control of, 281, 293
 in distribution of fungi,
 285
 feeding habits of, 142
 fungi infection, 291
 seed treatment and, 380
 Thimet
 control by
 of cotton insects, 379-
 80
 of onion maggot, 374
 of seed-corn maggot,
 373
 seed treatment, 369, 378
 as systemic agent, 379-
 80
- Thiram, 374, 376
 Thonalmus, 126
 Thrips, 379
 Thrips imaginis, 353
 Thrips tabaci, 379
 Thysanoptera balsamea, 109
 Ticks, 320, 389
 Tilia americana, 92
 Tillomorphini, 103, 124
 Tillyardia gigas, 122
 Tipha matura, 167
 Tissue culture, 17-38
 amino acids, 26-27
 antibiotics in, 31-32
 characteristics of, 21-30
 culture flasks, 30-31
 embryonic determination,
 23
 energy source, 26
 hydrogen ion concentration,
 31
 media in, 24-30
 adenosine triphosphate,
 27
 amino acids, 26-27
 conditioned, 25
 energy sources, 26
 hormonal environment,
 27
 ionic composition, 25
 nucleic acids, 27
 other organic acids, 27
 tissue extracts, 28-29
 vitamins, 27
 methods of sterilization in,
 32
 morphogenesis and, 33
 organ, 23-24
 and pathology, 34
 pharmacology, 33-34
 sensitivity to growth in-
 hibitors, 32
 separation of cells, 32
 simple epithelia, 21
 substrates, 31
 temperature in, 30
 tracheation in, 22
 uses of, 33-34
 Tissue formation, 10-11

- T**
- Torymus druparum*, 353
Toxaphene
 control by
 of European apple sawfly,
 352
 of seed-corn maggot, 373
 fish sensitivity to, 337-38
 measurement of potency,
 322
 residual toxicity testing,
 327, 330, 332
 T₅₀ test and, 336
Toxoti, 103
Traceheaton, 22
Tragiscoschema bertolonii,
 111
Tragiscoschema wahlbergi,
 111
Tragoscephalini, 123
Tragsoma, 121
Trialeurodes abutilonea, 379
Trialeurodes vaporariorum,
 168, 239
Triatoma, 404
Tribolium, 53
Tribolium castaneum, 248,
 321, 323, 325, 328
Tribolium confusum, 248,
 322, 325
Tribulus terrestris, 272
Trichodectes canis, 406
Trichoderma viride, 368
Trichogramma cacoeciae,
 164
Trichogramma minutum, 271
Trichomesini, 103
Trichoplusia ni, 279, 293
Trirhabda pilosa, 260
Trithion, 348, 355, 373
Tritogenaphis rudbeckiae, 65
Trogoderma granarium
 (Khapra beetle), 200
Trophannion, 177-78
Trypanosoma citelli, 404
Trypanosoma cruzi, 390, 404
Trypanosoma duttoni, 404
Trypanosoma evotomys, 404
Trypanosoma leporis-sylvaticus, 404
Trypanosoma lewisi, 390,
 403-5
Trypanosoma nabiasi, 404
Trypanosoma neotomae, 404
Trypanosoma parkeri, 404
Trypanosoma peromysci, 404
Trypanosoma rabinowitschi,
- 404
Trypanosoma soricis, 404
Trypanosomiasis, 403-5
Tsetse fly, see *Glossina*
 morsitans
Tuber flea beetle, see *Epi-*
trix tuberis
Tuberolachnus salignus, 63
 feeding habits of, 140, 141
 142
 nutrition of, 143, 145
Tucumania tapiocula, 263
Tularemia, 397-99
Tunga, 392
Tunga penetrans, 407-8
Typhlocyba froggatti, 353
Typhlodromus, 242, 243
Typhlopsyllus assimilis, 404
Typhus
 endemic, 399
 epidemic, 400
 flea-borne, 399, 400
 Mexican, 399
 murine, 399-403
Tyria jacobaeae, 259, 269-70
- U**
- Ulex europaeus*, 254, 269
Ulmus americana, 92
Uracanthus cryptophagus,
 110
Uropoda, 408
- V**
- Vanessa*, 69
Vanessa urticae, 70
Verticillium, 281
Vespa, 20
Vesperini, 126
Verperus, 103, 111
 feeding habits, 115
 oviposition of, 119
 rootfeeding adaptations,
 127
Viruses
 in Cerambycidae, 129
 diseases, control of, 380
 and insecticides, 293
 latent infections, 284, 286
 persistence of, 290
 pest control with, 278-79
 physical factors and, 292
Vitamins, 27, 52
Viteus vitifoliae, 142, 143
- Volumnia westermanni**, 111
- W**
- Wasps**, 124, 126
Wattle bagworm, see *Koto-*
chalia junodi
Weather, 324
 see also Bioclimatics
Web building, 212, 214
Western raspberry fruit-
 worm, see *Byturus*
bakeri
Wheat sawfly, see *Cephus*
cinctus
Wireworms
 control of, 364, 365, 368,
 369-72
Woolly apple aphid, see *Eri-*
soma lanigerum
- X**
- Xanthium*, 260
Xanthium pungens, 271
Xanthium strumarium, 271
Xaurus bennigseni, 121
Xenopsylla cheopis
 history of, 391
 murine typhus in, 400, 401
 as plague carrier, 395-99
Xenopsylla pachyuromydis,
 391
Xenopsyllus cleopatrae, 409
Xixuthrus heros, 121
Xixuthrus microcerus, 121
Xordini, 128
Xyloteles, 102
Xylotrechus, 107, 112,
 128
Xylotrechus insignis, 103
Xylotrechus quadrimacula-
tus, 102
Xylotrupes, 11
Xystrocera globosa, 104-15
Xystrocera nyassae, 117
- Z**
- Zelliboria*, 125
Zeuxideplosis giardi, 265,
 266
Zootermopsis, 50
Zygaena carniola, 285
Zygaenobia intestinalis, 285
Zygrita diva, 123